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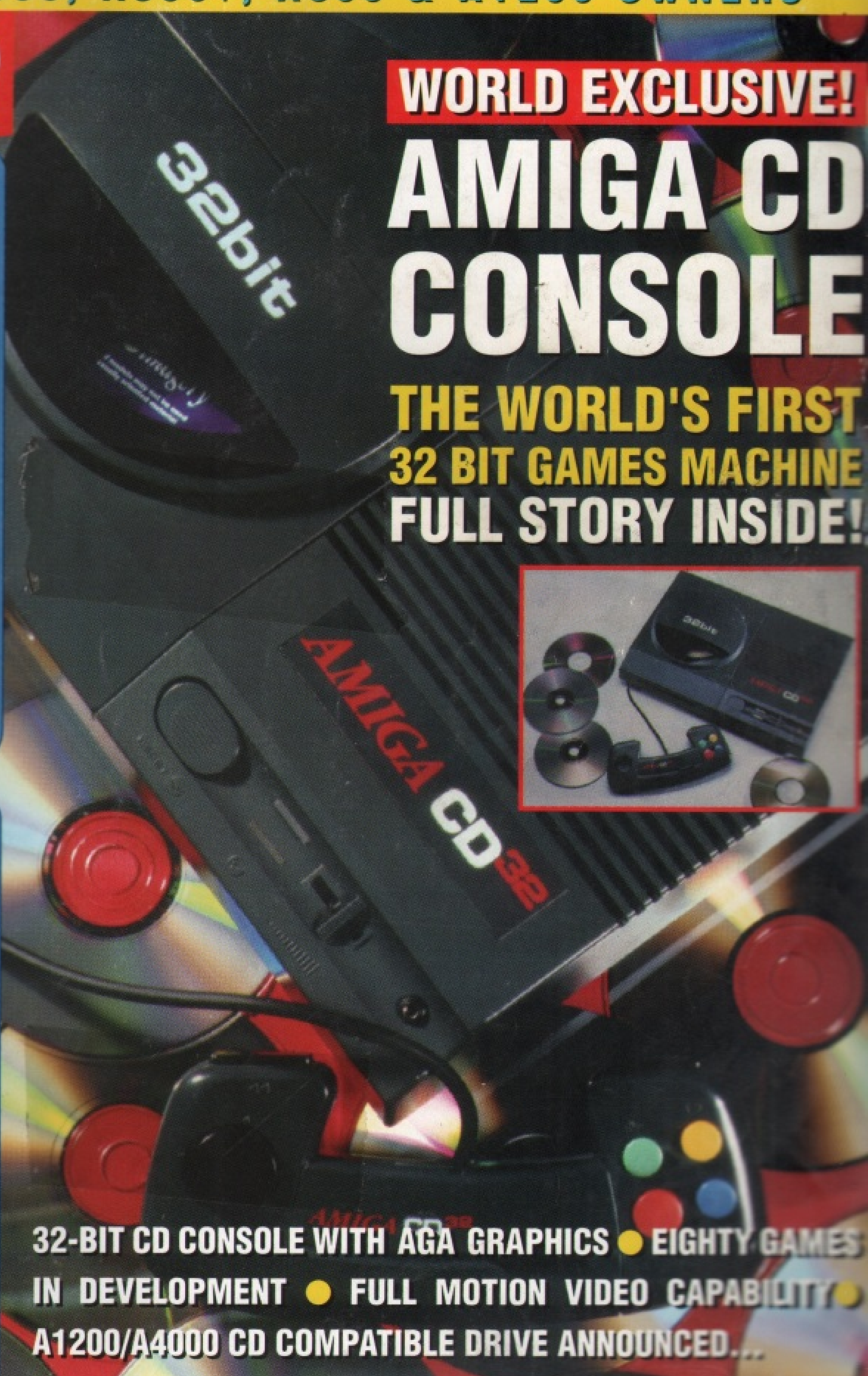
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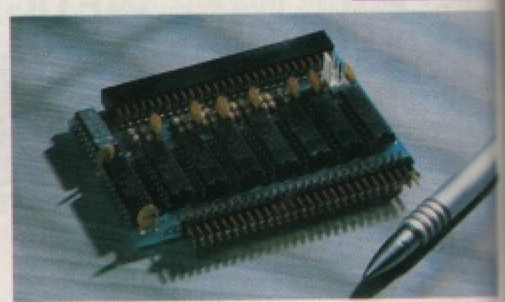
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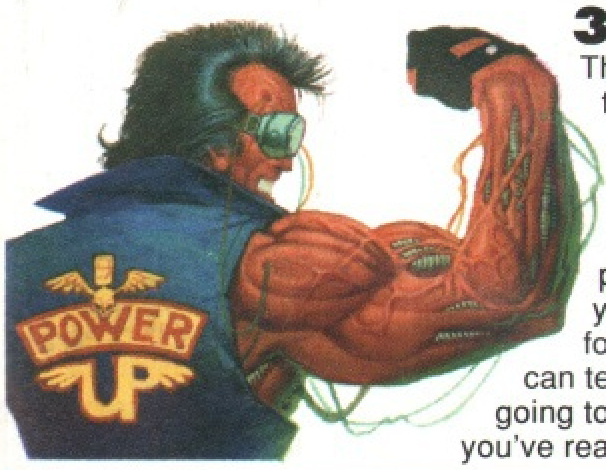


8 AMIGA CD 32-BIT CONSOLE

In a world exclusive, CU AMIGA brings you all there is to know on Commodore's new 32-bit CD console.

This is the future of gaming as we know it. There is simply no other console available that can match this machine. With the addition of full motion video it'll form the future of home entertainment. And with an unprecedented level of support from software developers it's sure to hit the streets with the force of a nuclear explosion. In another CU exclusive we reveal who's coding what and when you'll see it.

Turn to page 8 for the start of a four-page report on the new machine.



34 MUSCLE UP

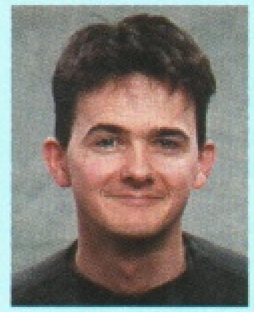
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REGULARS

OFF THE CUFF

EDITORIAL



Dan Slingsby – Editor

Nintendo and Sega are history! After months of speculation, Commodore have finally unveiled their new super console, the Amiga CD32, and it's an absolute corker. Featuring AGA graphics, the new machine comes equipped with an '020 processor and 2Mb of RAM. What's more, its 32-bit architecture means we're going to see some stunning new games in the coming months, the likes of which have never been seen before. An incredible 80 games are already in development and at least 30 of these will be original titles. Best of all, its world-beating CD technology means we can finally wave goodbye to multi-disk floppy-based games once and for all.

The implications are immense, and some of the product we've seen is simply breathtaking. If the machine takes off, and I honestly think it will, then the games market is set for a revolution. Sega and Nintendo are still some way off launching a CD-based 32-bit console – some estimates put it as much as two years – so Commodore have a chance to monopolise the market. At £299, the Amiga CD32 is almost £100 more expensive than we predicted, but it's still an incredible buy when compared to Sega's lacklustre 16-bit MegaCD. (Shame about the design though...)

Even better news, A1200 and A4000 owners will be able to upgrade their machines with a CD drive which will be launched later this year, so everyone can benefit from the plethora of new titles that are on their way. And it's not just games that are being developed for the machine – as our news section reveals, there's a number of serious titles set for release over the next few months. Full details begin on page 8, and we'll be following it up with a 32-page supplement next month.

Blimey, after all that excitement I think I'd better go and have a cold shower! Enjoy the mag and, hopefully, you'll be back for more next month...

NEXT ISSUE ON SALE 19TH AUGUST

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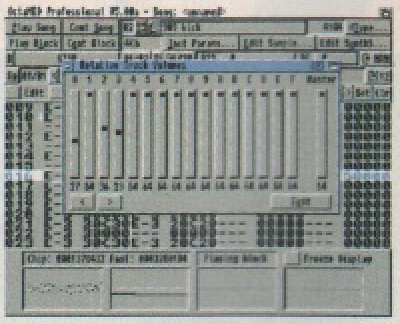
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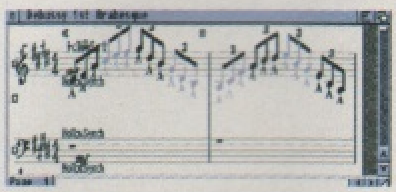
GET SERIOUS

PRODUCTIVITY REVIEWS PRODUCTIVITY REVIEW

Welcome to the best dedicated technical review section of any Amiga magazine. This month we bring you a first look at VLab YC. All the way from Germany's Macrosystems comes this excellent SVHS compatible digitiser. It can actually grab images, frame by frame, using the new Interleaf frame grabber, find out more on page 98. Also, in response to your massive demands, we've got a complete step-by-step guide to installing a hard drive on your A1200. Get your irons out on page 122.



OctaMed has finally reached version 5. It features a new user interface with pull-down menus. Plus, you can now use 64 tracks. But is it any good? See page 110.



As another long-awaited music program hits the streets we send Mat Broomfileld on an expedition of discovery. Can he build *Deluxe Music*? Find out on page 114.

SCREEN SCENE

GAME REVIEWS GAME REVIEWS GAME REVIEWS

Jurassic Park – the game of the movie – is in development. Will it be just another Ocean license? We go behind the scenes. Also this issue, US Gold's massive RPG, *Blade of Destiny*, gets the full treatment. Fancy a burger but worried about the environmental damage it'll cause? Well, you can have your cake and eat it as McDonalds' eco-warriors go on the rampage in *Global Gladiators*. Full review on page 69.



'The dinosaurs are coming!' Will buyers run in terror from Ocean's license or will it break all records? CU AMIGA goes behind the scenes on page 56.



An RPG that features complex, planned battle sequences. Whatever next? Jon Sloan checks it out on page 60.

COVERDISKS

Cor, what a pair we've got! And as for the disks, they're not bad either. This month there's an ace wordprocessor, *Interword*; plus, a fantastic playable demo of *Apocalypse*, a frantic blast and rescue game from Virgin. Remember you only get two disks with CU AMIGA.

DISK 62 — PAGE 22

Our recent survey showed us that loads of readers are interested in word processing. So, in response to overwhelming demand, here's one of the best full-price programs there is! *InterWord* is a fast and stable word processing program with new advanced functions including, amongst other things, an optimal utilization of your printer hardware. Moreover, as part of the InterOffice range, it can import and process text from other members of that family as well as most other word processing systems. In addition, it has extremely fast screen updating, a user-definable layout and a massive 137,000 word dictionary. Should you desire, and have the memory, you can also have up to 50 documents open at once. Incredible! Don't miss out on this fantastic package.



DISK 63 — PAGE 28

Anyone remember *Choplifter*? That early arcade classic had gamers hooked right from the start. Well, now's your chance to play a souped up 90s-style flight, shoot and rescue version of that top game. This ace blast from Virgin lets you pilot a helicopter gunship across scrolling levels of tropical jungle. You can blast the opposition out of the sky using your twin forward-mounted cannons or, better yet, pick up one of the many power-ups and then fire off a heat-seeking missile. In between frying the enemy take time to strafe the ground troops and their buildings. Careful though, 'cos they've got some prisoners of war down there, and it's your job to drop down and rescue them. It's been two years in the making so you're in for a treat. All manner of dangers await the fearless pilots so stick the disk in, grab your joystick and get flying!



CU NEWS

AMIGA CD CONSOLE REVEALED

Ending months of speculation as to what their next move would be, Commodore unveiled their plans for a brand new 32-bit console called the CD32. The conference was attended by some of the most experienced journalists in the industry including a three man delegation from CU, and despite a veritable barrage of probing questions, the £299.99 CD32 looked as sweet at the end of the day as it did at the start. In an extended news feature we bring you all the details on the new machine – what it is, what it can do, and what you can play on it...



A QUESTION OF EXPANSION

One fact that Commodore barely mentioned is the machine's expansion capabilities. These come in the form of a keyboard connector and full expansion bus. With the extras that are planned for release later this year, it will be possible to upgrade the machine to a full A1200, so it can be used for serious applications as well. Even more impressive is the fact that a CD32 kit will be released for the A1200 which will give it full CD capabilities.

Whichever way you upgrade, from A1200 to CD console, or from console to A1200, the total price is likely to be the same, and of course the FMV module will be available under both routes.

I strongly suspect that the CD32 upgrade finally explains the tiny expansion port at the back right of the A1200...

Incidentally, it's also possible to add an accelerator and RAM to the CD32.

Let's start by looking at the facts: the CD console has a slightly larger footprint than a sheet of A4 paper and is a couple of inches deep. It has a slight bulge on the top caused by the top loading CD holder. Unlike the CDTV, the CD32 does not require expensive and ungainly caddies to hold the CDs, they just slot straight in as with a standard CD player.

GETTING BASIC

The machine is based upon the AGA chipset found in both the A1200 and A4000 Amigas, although its specifications place it closer to an A1200. It is capable of displaying graphics in up to 256,000 colours from a 24-bit palette of 16.7 million at resolutions up to 1280x512 pixels.

Of course, all of those colourful detailed graphics will require a lot of processor power to move them around, which is why Commodore opted for a 14Mhz 68EC020 chip. More than twice as fast as the standard 68000 found in the A500, this was by far the best option in order to keep production prices down. Compare this to the MegaCD's 12Mhz 68000 chip and you start to get an idea just how much more powerful the CD32 really is.

Another important factor when you're talking about moving large amounts of graphic data around is the memory to do it in. There's no point having compact discs capable of storing 600Mb of data if the computer can only accept 128k of that at a time (as is the case with the MegaCD)! Fortunately, Commodore have come up trumps again, providing CD32 with a full 2Mb of RAM.



David Pleasance, the front half of the CBM UK leadership duo.

The console naturally has two joystick ports into which can be plugged two 11 button controllers, yes that's right, 11 buttons! This means that CD32 will have the highest number of buttons on a console controller, which in turn means that owners have the best chance of getting exact conversions of arcade games, to say nothing of plenty of original CD32-only stuff!

In terms of outputs, the machine has an S-Video, a composite video and RF out jacks. It also includes stereo audio jacks for connecting to a hi-fi if you own one. If not, there's also a stereo headphone jack so you can listen through Walkman headphones if you prefer. There's even a separate volume control for the headphones.

On the subject of sound, the machine still uses four channels to provide stereo 8-bit sound. However, it's worth remembering that with all that storage capacity, sampling rates can be higher, and samples longer, so we should see a dramatic increase in sound quality. Mind you, that's totally overlooking the most important aspect of the console — it's a CD player, too! This means that programmers can incorporate a full CD soundtrack if they so desire. The CD player uses 256 position 8-bit oversampling.

With its CD playing abilities comes another bonus – the ability to play CD&G disks. CD&G is an acronym for Compact Disc and Graphics, or to put it another way, you can look at pretty pictures, whilst you listen to your favourite star warbling or groaning away. To be fair, CDTV was also capable of playing and displaying CD&G disks, but there is a very, very important difference in CD32, and one that means that this really is world leading technology.

With an appropriate add-on, to be released in the not-too-distant future, the CD32 goes from simply being able to show static photographs, to playing animated ones à la television. Called Full Motion Video (FMV) this means that you could soon be buying CDs that not only contain music tracks, but also include an accompanying video, too.

There are two important factors that allow the CD32 to handle FMV when Sega's rival MegaCD cannot – the first is the fact that the CD32 is able to transfer data from CD at 300 kilobytes per second, twice the rate that the MegaCD is capable of. Furthermore, with the FMV add-on, the unit gains MPEG capability. MPEG stands for the Motion Picture Experts Group and it refers to a special type of picture compression that yields absolutely amazing rates of reduction. It's only really suitable for 'real world' images (digitised photos and video), and is only practical when a hardware implementation of the process is used (it's too slow otherwise). However, MPEG is seen as the future in computer/video animation by many. There are two implementations of MPEG. The CD32 uses version 1 which is targeted at home and non-professional users, whilst version 2 is being used for full broadcast video (TV and satellite).

AND THE CDTV?

When asked whether or not existing CDTV titles will be compatible with the CD32, Commodore's David Pleasance responded that about 60 per cent of titles would be compatible. Obviously titles that require a keyboard or floppy disk drive will only work on CD32s which have the necessary upgrades. It would seem then, that the majority of incompatibilities are due to the new AGA chipset which caused problems for many pre-3.0 software titles.



The rear view of the console shows the commitment Commodore have made towards making this a machine capable of supporting not only games, but Full Motion Video titles as well. Not only are there composite and modulated outputs, but also an S-Video port for S-VHS compatible images with better resolution than many of today's home videos.

Although Commodore themselves now admit that CDTV was something of a failure, the technology used did enable them to develop this new console. Although its existence may bring a little hope to CDTV and CD ROM owners, it's highly likely that most developers will produce software that uses the new console's capabilities. This means that software written for the CD32 is unlikely to be downwardly compatible. The main reason for this is that the specs of the two machines are so different that CD32 developers are unlikely to want to spend time developing two separate sets of code, especially when you consider that the total worldwide CDTV market is less than 50,000 units.



Colin Proudfoot, the other half of CBM UK General Manager, and the one with his hand on the corporate wallet.

Of course developers could write code which simply runs on both machines, but the major problem there is the difference in quality between the two. After all, if you'd just spent a year developing a game, would you want it to lose out simply because it uses 32 colours instead of 256?

SAVE IT

Because of its games bias the CD32 includes a 1k flash RAM area. This is non-volatile RAM that can be used to store game positions and the like, even after the power has been turned off. Amazingly, this new technology doesn't even require a battery to work!

Now obviously, 1k is not much at all to save games in and to combat this, publishers are being urged to write games that use password saves or other reduced data methods.

Because the CD32 has the necessary hardware to attach a floppy drive, I don't suppose it'll be long before appropriate drives appear and more complex floppy disk based saves start to appear again.

NOT JUST GAMES

Commodore describe CD32 as a games console, and of course it's set to be not just *a* games console, but *the* games console. Nevertheless, there will certainly be serious programs available for it too. At least one software developer has educational products planned, and another has what he would only describe as 'a unique and exciting new concept in computer software'. There is no doubt that we will also see the likes of Encyclopaedias and other reference works.

These titles will ensure that the CD32 is completely unique among games consoles as being the only one to expand your mind as well as your trigger finger — a great advantage if you're trying to convince your parents to buy one for you! CU

WILD SPECULATION

At the CD32's unveiling a journalist voiced a rumour that Commodore was to be taken over by either Nintendo or Sony.

Nintendo, of course, are the makers of the world's most popular games console, the Super NES. However, their arch rivals Sega have just released the MegaCD. As Nintendo don't yet appear to have a CD-based console of their own, it would make sense for them to buy one 'off the shelf' as it were.

Sony, on the other hand, have long enjoyed good relations with Commodore and since the apparent demise of their own CD console project the 'Play Station' they too would appear to be on the lookout for a ready made alternative.

Of course, sceptics might say that this is exactly the kind of thing that Japanese companies are so expert at — let somebody else develop the technology then get hold of it off the shelf and do it cheaper.

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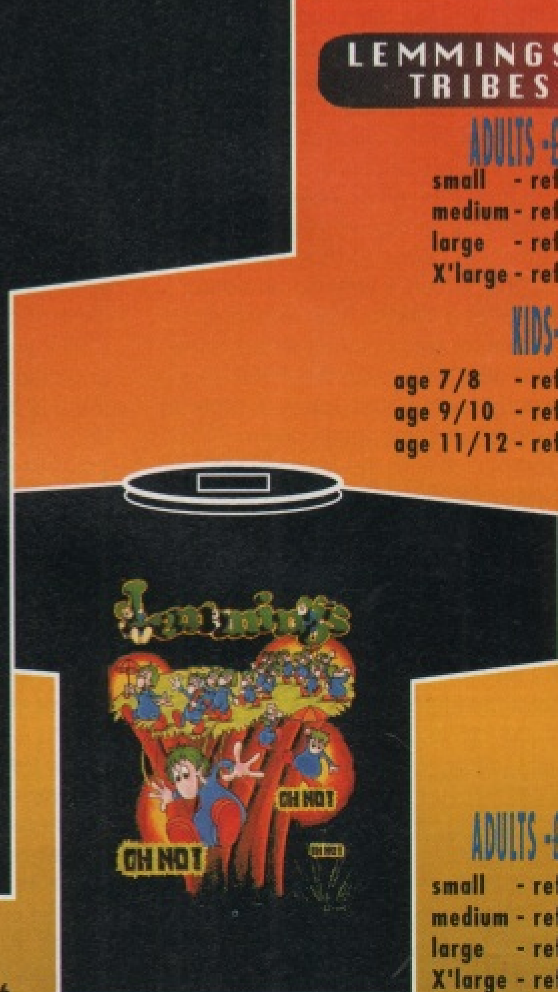
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THE SHAPE



OF GAMES TO COME

The Amiga CD32 console might be a tasty bit of kit, and it certainly kicks the MegaCD right into touch, but it's the level of publisher support that either makes or breaks a new games platform. Luckily, Commodore have gone out of their way to ensure that the CD32 has an incredible roster of games lined up for its release. There are an amazing 90+ games already in development for the machine and many of these are original products, too! After much burning of the midnight oil, and running up a huge transatlantic 'phone bill, we've managed to come up with a definitive list of exactly what you can expect to be playing on the new Amiga console in the months to come.

MICROCOSM
PSYGNOSIS

This game was previewed in CU a couple of months ago (along with *Dracula*) as a CDTV product. It's extremely unlikely now whether it will make it in that format. However, should Commodore and Psygnosis reach an accord in their discussions it will be a definite for the console.

The plot is essentially a rip-off of the *Fantastic Voyage* and *Inner Space* films with the player acting the role of the miniaturised pilot. You're dropped into the body of some noted VIP who's been invaded by other miniaturised warriors (don't look at me, I don't write these plots). The idea is that you race around his arteries and veins seeking out the enemy and blowing them out of existence. It uses superb ray-traced graphics to depict the action and certainly moves along at a fair old pace. A definite contender for CD game of the year.



BULLFROG

Only recently released on floppy, *Syndicate* will shortly make its debut on CD. Those top coders at Bullfrog are already beavering away at re-programming this strategy/blaster to take full advantage of the new machine. As the team are known for their innovation we're sure that they must have more than one product lined up for the console. It's likely that they're also planning at least one totally new game.



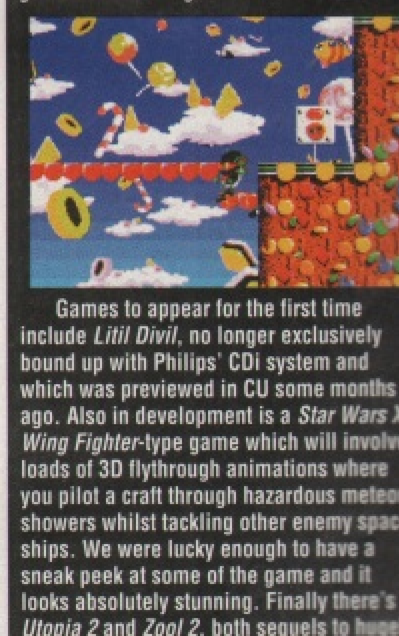
GRANDSLAM

As it was their biggest hit to date it comes a no surprise that *Nick Faldo's Championship Golf* will be making an appearance on the CD32. Scheduled for October, this top flight golf sim is sure to take full advantage of the CD's capabilities with digitised pics of Nick as well as enhanced backgrounds and music.



GREMLIN

It's encouraging to see one of the country's top five software houses putting their money where their mouth is and wholeheartedly supporting the new platform. The Sheffield-based softcos have lined up no less than nine titles for the console. Among these, the premier title has to be the *Lotus Turbo Trilogy*. Yes, that's right, Gremlin are combining all three of their hit *Lotus* racing games and including them on one disc. This has to be the way forward and Gremlin are to be congratulated for such a bold move. We're sure it will pay off with record sales of what is the best series of racing games on the Amiga.



Games to appear for the first time include *Litil Divil*, no longer exclusively bound up with Philips' CDi system and which was previewed in CU some months ago. Also in development is a *Star Wars X-Wing Fighter*-type game which will involve loads of 3D flythrough animations where you pilot a craft through hazardous meteor showers whilst tackling other enemy spaceships. We were lucky enough to have a sneak peek at some of the game and it looks absolutely stunning. Finally there's *Utopia 2* and *Zool 2*, both sequels to hugely successful games. It's undecided whether to release them on this format first but if they do A1200 versions are sure to follow at a pace.

On the conversion side Gremlin will be releasing their new *Hero Quest* game – *The Legend of Soracil* – as well as the *Nigel Mansell* racing sim which will benefit from the addition of CD sound. Sports strategy will get a look-in too with an enhanced *Premier Manager* plus top platform romp, *Zool*.

»

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MICROPROSE

Famous for their strategy and flight sims Microprose have already signed a license to convert some of their top titles onto the CD32. There's more detail on *The Legacy* in the main section, but they're also set to give us *B17 Flying Fortress*, Sid Meier's groundbreaking god game *Civilisation*, and their famous *Grand Prix* game. All are prime titles for disc, being multiple floppy titles.

MILLENNIUM

These Cambridge-based software publishers are wholeheartedly backing the new platform with the release of five titles.



The first, *Diggers*, is previewed in First Imps this month and will be released at the same time as the console itself. Also new is *Dino Worlds*, an isometric adventure with the player guiding a friendly T-Rex and his companion in their quest to find the meaning of their existence, as well as the popular PC adventure *Daughter of Serpents*, a huge game with some incredibly realistic visuals. Continuing their links with Flair they have licensed the CD-version of *1884*, a trading game set to include eight minutes of animation. Finally, what Millennium release schedule would be complete without *James Pond* somewhere in it? The second in the series, *Robocod*, will also make the transfer from floppy to CD.

MINDSCAPE





Already having mentioned *Liberation* as a contender for the bundle Mindscape are also planning to convert other existing titles. In the works are *Chaos Engine*, everyone's favourite kick-about *Sensible Soccer* and *Sim Life*, Maxis' impressive but highly complicated strategy title. The only really new title is *Drive Fractulus*, a superb flight sim/shoot 'em up using pre-rendered fractal landscapes.

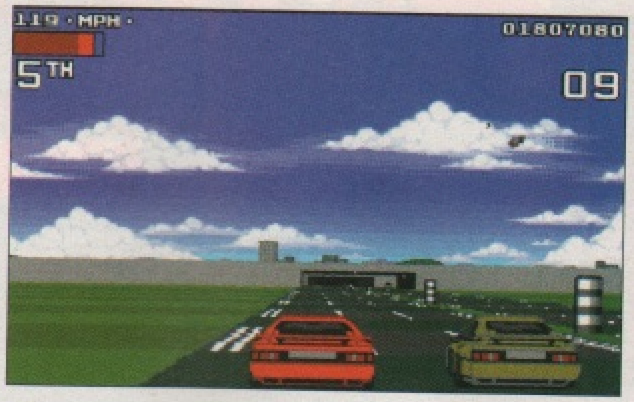
MIRAGE

This company's been fairly quiet on the Amiga front recently with their only product being an expansion for *Humans*. However, they have been rather busy with PC CD titles all of which show great potential for console conversion.

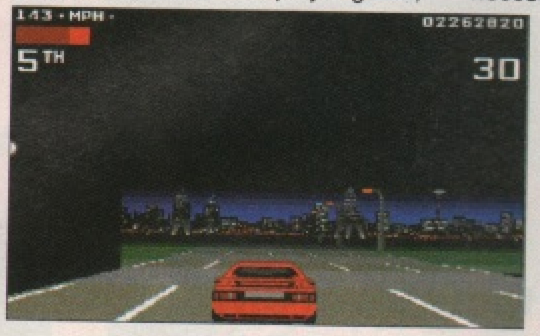
Rise of the Robots is basically a beat 'em up featuring huge metal warriors. The graphics are incredible with massive ray-traced characters slugging it out. The two other games are both strategy based and include full motion video. *Return to the Lost World* is another dinosaur adventure using stop-motion animated figures and *Space Junk* is an exploration game. Let's hope a license is signed soon.

LOTUS TURBO TRILOGY

GREMLIN



Three games for the price of one – that's the promise from Gremlin as they collect together their chart-topping *Lotus* games and stick them onto one disc. All three games topped the Amiga charts on their release, and with good reason. The first two games offered different methods of control, and different racing arenas, which were then incorporated into a third version which tweaked the gameplay still further to produce the ultimate racing game. Played as either a one, two, three or even four-player game, the competitive nature of the *Lotus* titles means you'll be battling away for hours with this value-for-money offering. Although the games are slightly lacking in on-screen pick-ups to boost the performance of your car, such add-on extras are not really necessary as the pace of the game, the huge sprites and super smooth scrolling mean you'll not be able to put this one down once you've loaded your disc. Whether you're competing over desert tracks, across icy mountain passes or merely over circular racing tracks, the testing conditions will really put you through your paces.





GRAND PRIX

MICROPROSE

Geoff Crammond is one of the few celebrity programmers to have really earned his reputation. With *Stunt Car Racer* and *Revs* already under his belt, he set the Amiga world alight with the release of *Formula One Grand Prix* towards the end of 1991. Super-fast and incredibly detailed, the game used a first person perspective to depict the on-screen action and, at times, it almost felt as if you were really there. Each of the sixteen courses was modelled on an existing F1GP track, with extensive video footage used in designing the twists and turns of their digital counterparts. Now, thanks to those lovely boys and girls at Microprose, we're about to experience all the thrills and spills of Grand Prix racing all over again, but this time in a much souped up version.

This time around we'll be able to enjoy 256 colours, and the game itself will be much, much faster thanks to the console's '020 chip. You'll need quick reflexes to stop your car banking a curve or running out of control on a razor sharp bend. There's also the possibility of enhanced sound effects, too. Although these were fairly impressive in the original 16-bit floppy version, there's scope for extended sampling on the CD-version and Microprose are looking to take maximum advantage from this.

GOODBYE PIRATES

For software developers, the CD console is a dream come true. It combines the high specs of an A1200, with virtually unlimited storage capacity and low development costs. Better yet, because commercial CD duplication is so expensive, only professional pirates are able to copy the games, and they're relatively easy to detect and combat.

It's this factor that has kept CDTV alive despite its small market. The CDTV market is one seventy fifth as small as the Amiga market, but for every title sold on the Amiga, 50 are pirated. On the CDTV, there is no piracy problem at all.

Of course, because of the huge amounts of data stored on CDs, most titles will be too large to copy onto floppy disks anyway. This means that far less titles will carry manual-based protection systems which can slow down your entry into a game.

AKIRA

ICE



Manga fans will be ecstatic to learn that the character that caused such a popularity explosion in the genre will be appearing in his own game. *Akira* is set in a post-Apocalyptic Tokyo and tells the tale of the next stage in human development! Despite such a high-brow premise it's actually an incredibly exciting cartoon movie with rival biker gangs slugging it out across a garish, neon-lit city. One gang member has an encounter with an escaped mutant child which causes him to realise his own super-human capabilities. The resulting trail of destruction is something that could only be feasibly achieved in cartoon form and is amazing to watch.

The game is going to intersperse actual movie footage with the proposed platform and beat 'em up elements that make up the main game. With the huge surge in popularity of Manga this game could actually sell the console by itself.

GAMES BUNDLE?

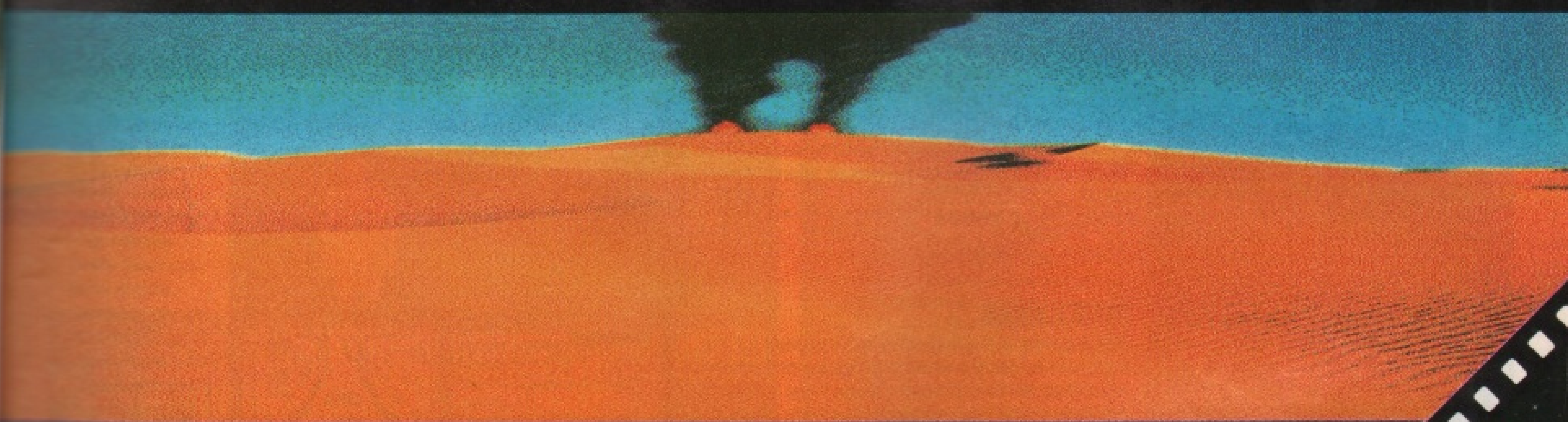
Any good marketing expert knows that a new games machine has to have some kind of bundle deal. In other words you've got to give your consumers some kind of great deal to help get a product off the ground. Commodore have done some brilliant bundle deals in the past and the console is bound to have one too.

Given the release date for the console and the proximity of a certain game-of-a-blockbuster film it doesn't take much effort to put two and two together to come up with *Jurassic Park*. Previewed elsewhere in this issue the game looks set to be as big a smash as the film. Also rumoured to be included in the special pack are *Liberation* from Mindscape and *TFX* (formerly *Inferno*) from Ocean. All three games are graphically intensive actioners that will show the CD off very well. A pack containing those three titles would certainly be very popular at a £349 price point.

DUNE II™

BATTLE FOR ARRAKIS

AVAILABLE ON AMIGA



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TEXT BY *DONNA J. BUNDY, RICK GUSH.*
ART & ANIMATION BY *AARON E. POWELL,*
REN OLSEN, JUDITH PETERSON, ERIC SHULTS,ELIE ARABIAN.
MUSIC AND SOUND BY *FRANK KLEPACKI, DWIGHT OKAHARA.*
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VGA SCREEN SHOTS SHOWN

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Virgin GAMES



OCEAN

Still in negotiation with Commodore as we go to print, Ocean seem close to signing a deal to publish most of their top games. *Jurassic Park* would be an obvious candidate for bundle inclusion (see Games Bundle? box), whilst other games would certainly be welcome on the new format.

Existing products include *FA Premier League* and *Sleep Walker* as well as the soon to be published *International Open Championship Golf*, *TFX* (formerly *Inferno*), *Inferno* (formerly *Odyssey*) and *Burning Rubber*. Ocean also have a number of programs still in early development, such as *Mr Nutz*, a Mario-inspired platform romp, *First Contact*, an alien adventure, and *John Doe*, another adventure featuring a character suffering from amnesia.

PSYGNOSIS

Although better known for their *Shadow of the Beast* and *Lemmings* games, Psygnosis have just put together two corking games for the PC CD. *Microcosm* (see main text) and *Dracula* were both well received by the trade press when they were screened and received coverage here in CU. *Dracula's* basically a scrolling beat 'em up/adventure that's more loosely based on the film rather than the book. The idea is to travel through the Transylvanian countryside to Drac's lofty abode smacking all manner of evil dudes on the nose (or wherever) before having a showdown with old toothy himself. A license has not yet been signed for the Amiga version but would seem likely. On a lighter note the *Lemmings* series is bound to make it onto CD32, possibly with all three games on one disc.

RENEGADE

Upcoming games from Renegade, the brains behind the smash *Chaos Engine*, include *Rough & Tumble*, *Uridium II* and *Flight of the Amazon Queen*. It is believed that they have agreed in principle to take a CD license but all the details had not been ironed out by the time we went to press with this story.

Rough & Tumble stars a small kid with a liking for big guns. The gameplay is essentially a platform shoot 'em up with graphics that make *Magic Pockets* look like a Spectrum game. *Uridium II* on the other hand is the sequel to that classic space blaster of the same name, where your small fighter flew over gigantic battleships destroying everything in sight. It's due for release on the standard Amiga soon so we'll have a full review then. Their third offering, *Flight of the Amazon Queen*, is a bit of a departure for the Renegades as it's a graphic adventure. Not much is known about the project at this stage, they're keeping everything top secret, but we'll have more soon.



GETTING SERIOUS

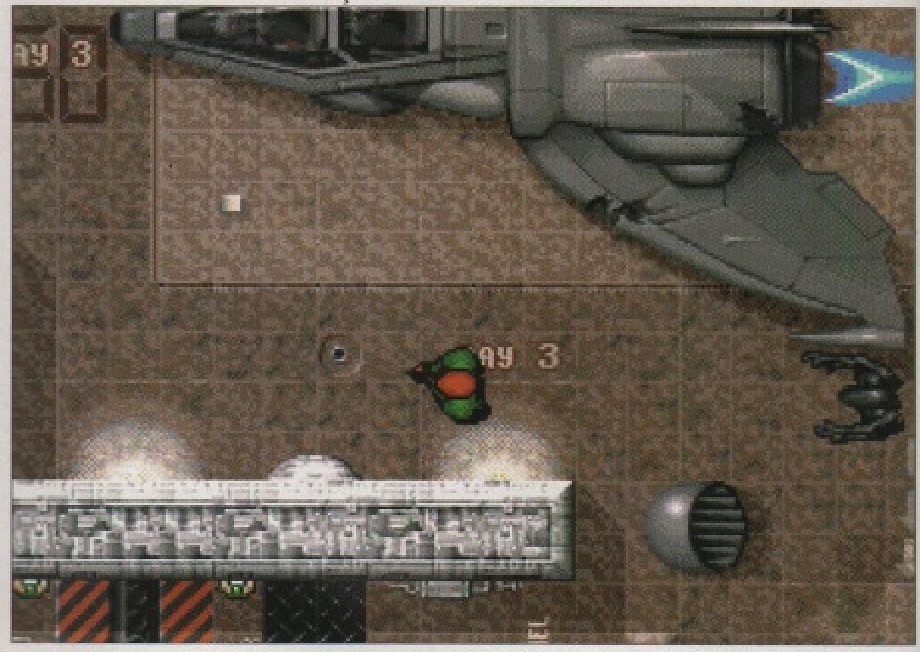
It's not all games you know, there are some people out there who believe that the storage capacity of the compact disc should be put to better use than simple games playing. For those poor unfortunates here's a brief list of the more educational titles already confirmed

Already on PC CD ROM *San Diego Zoo* is a complete walk through of America's largest menagerie. It features Full Motion Video, stills and samples of all the animals contained there. It's essentially a biology lesson on disc. Imagine being able to visit the zoo with the presenters from The Really Wild Show and you'll get some idea of what I mean.

Also scheduled are two books on disc. The first is the CD version of the Guinness Book of Records which will contain the complete text of the famous record book as well as various digitised stills, the second is a former CDTV title called *Insight Technology*. Both will be published by Commodore.

ALIEN BREED 2

TEAM 17

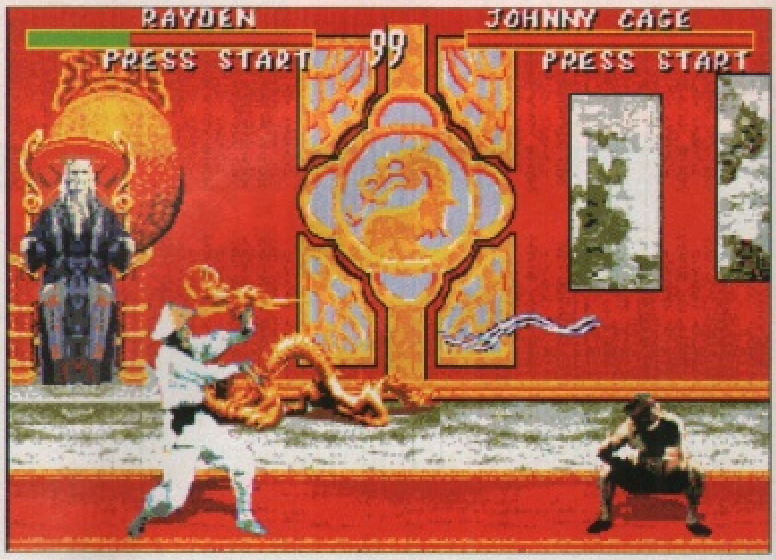


This *Gauntlet/Aliens* cross breed was one of the most successful games of 1992. It utilised a top-down view of the action which covered an abandoned space station absolutely over run with aliens. Up to two players could explore the sprawling station blasting any aliens foolish enough to cross their paths. There were loads of pick ups to collect giving you better fire-power, keys to unlock doors thus saving you wasting ammo shooting them away and auto mapping functions. Its critical and commercial success paved the way for a Special Edition version earlier this year.

In the sequel the action has moved down to a planet once more over run by hordes of aliens. Apart from the change of scenario Team 17 have listened to the comments made about the original and substantially tweaked the gameplay. There is no doubt that this will be a sure fire hit.

MORTAL KOMBAT

ACCLAIM

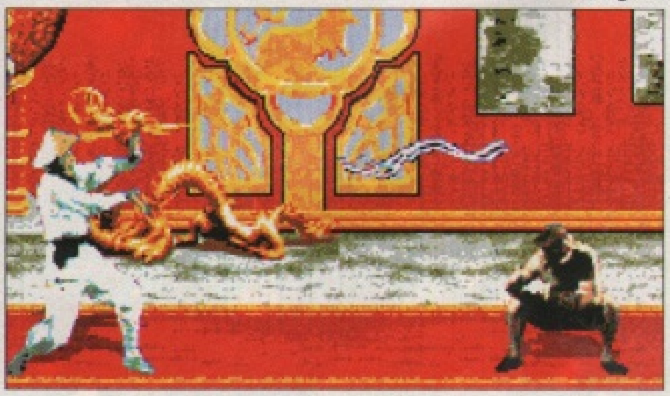


Discussions are going on at the moment for the inclusion of *Mortal Kombat* in the list of forthcoming CD titles. This vicious arcade beat 'em up is about to make it to the Megadrive with a standard Amiga version not far behind.

If you venture down to any arcade these days you're sure to find a *Mortal Kombat* machine or two. In fact, there are signs that it's overtaking *Street Fighter II* in the popularity stakes. It's easy to see why, too, what with its gory death scenes where victorious characters get the chance to tear out their opponent's spines or punch them onto beds of spears! Controversy and calls for banning are sure to follow closely in the wake of its release on any format.



If you're not familiar with the game play here's a quick run down. You get to play one of seven characters that have gathered on a remote Chinese island for a martial arts tournament. This is no ordinary tournament though – it's a fight to the death with the chance to face all manner of demons along the way. The moves are similar to *SFII* with a huge range of kicks and punches available as well as the usual secret moves.



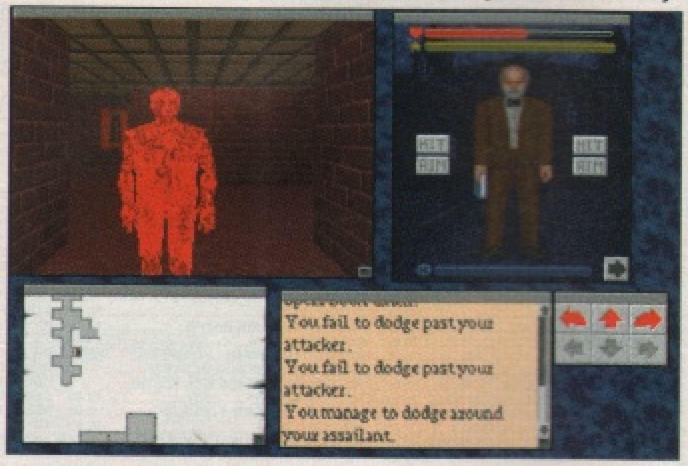
The Amiga version is being coded by top programmers, Probe, the team that coded *Aliens 3*. We've seen the Megadrive version and it looks great with massive digitised sprites very similar to the arcade machine. We're sure that with the graphics capabilities and the massive storage capacity of the Amiga CD our version will be almost identical to its arcade counterpart.



LEGACY
MICROPROSE

Adventure games are likely to receive a resurgence in popularity with the introduction of the console; it'll finally give Amiga-owners the chance to play all those ace PC adventures that we could only drool about before. One of the first smashes is sure to be this from Microprose.

Set in a haunted New England mansion the game revolves around the main character's attempts to escape – of course the only way to do that is to travel into the deepest darkest depths of the building in order to solve its mysteries. Unluckily for you this must be the most haunted house in the entire world – move over Amityville – as virtually every room contains ghosts, zombies, ghouls and hundreds of other, more malignant, entities. It's played with the usual point 'n click mouse controls using a unique window environment that can be tailored to your exact needs. If you've ever played Wonderland from Magnetic Scrolls you'll have some idea of how the control system works. That's where the similarities end though 'cos the PC graphics in *Legacy* are out of this world with brilliant filled polygon graphics, texture mapping and goraud shading used to their full effect.



We're unsure how the windows environment will be interpreted on the console but with better graphics and CD sound it will be fantastic.

AMIGA CD vs. MEGA CD

Because CD games technology is so new, there's very little to compare the CD32 against. One obvious choice is Sega's MegaCD which was launched a couple of months ago with a 28 million pound advertising campaign. I called Sega to ask for the specs of their MegaCD and as soon as they found out that I was working for an Amiga magazine, they refused to help me saying that they didn't want their machine compared against any Commodore competition. Their reaction speaks volumes, but here are the figures that I came up with (without Sega's help!).

	COMMODORE CD32	SEGA MEGACD
CPU	68EC020 @ 14Mhz	68000 @ 12Mhz
Resolution	1280x512	640x320
Colours	256,000	64
Palette	16.8 million colours	256 colours
Sound	4 Channel 8-bit	8 Channel FM
RAM	2Mb upgradable to 128Mb	128K
Save RAM	1k	none
Max Data Transfer Rate	300k per second	150kps
Controller	11 Button pad	4 button pad
Extras	Keyboard, FMV module, accelerator and full range of A1200 add-ons.	Lightgun
Price	£299	£269 + £119 = £388

SACHS ENTERTAINMENT

We're sure that the console is going to herald a new dawn for the adventure game so it's not surprising that *Defender of the Crown II* will make an appearance on it. Due for release on CD this month this classic RPG game will be a welcome draw for adventure lovers.

SYSTEM 3

Famous for their Last Ninja series, System 3's most recent Amiga offering



was *Putty*. Completely original games are few and far between these days but this was such a one. You played a small lump of elasticated goo in a desperate race against time to save your fellow creatures from alien invaders. Utilising your amazing amorphous capabilities you stretched and squashed your way around platforms



avoiding or absorbing all manner of nasties in order to reach your companions. We thought that it was such fun that we even had a special coverdisk commissioned featuring CU AMIGA artwork. Anyway, the sequel is due out soon on the SNES and both that and the original will definitely appear on CD32. Also up for conversion are System 3's excellent *Ninja* series of isometric chop socky adventures.

21st CENTURY

Pinball simulations on a computer seem like a pretty stupid idea but when you actually play 21st Century's ace sims you're soon hooked by their frantic flipper action. Using all the tricks and surprises of their real-life counterparts, about the only thing that you can't do on the sims is to tilt the table! As you've probably guessed *Pinball Illusions* and *Fantasies* are two personal favourites here at the CU offices so we're hoping that 21st conclude their discussions soon in favour of the console.



TEAM 17

Always at the forefront of Amiga innovation, Team 17 have fully committed themselves to the new format. All their major titles will appear on the console in September so we can look forward to beat 'em up action with *Body Blows*, space blasting with *Project X* and fast and furious platform leaping with *Superfrog*. I don't think that there is a magazine anywhere that can really criticise Team 17's games so it's absolutely fantastic that they've decided to go ahead with console development.

THALION

German-based softco Thalion have a long tradition of bringing quality games to the Amiga and they will be continuing that excellent reputation with the release of *Lionheart* on CD.

Recently released to good reviews the game stars a man-beast in his adventures across a multi-scrolling platform world. One of the brilliant innovations with this title was the way that *Lionheart* could interact with the backdrops. He could actually climb trees and swing from ropes in a way that hadn't really been fully explored before. With the addition of 256 colours and CD sound this game is sure to be one of the stars of the new machine.



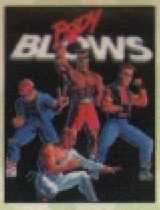
VIRGIN

Richard Branson's top software publishers have long supported the Amiga. As their new *Dune* adventure has appeared on CD ROM it's not surprising to learn that it will also make it to CD32. Other CD ROM titles not yet confirmed include *7th Guest* which is a haunted house mystery using real live footage to depict all the action. Its clarity and full-screen size have achieved loads of plaudits for Virgin's developers and it's a prime candidate for CD32 especially when the the Full Motion Video peripheral is released. We could see some real ground breaking stuff.

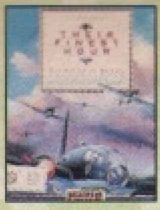


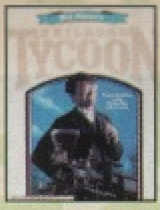

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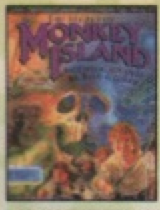

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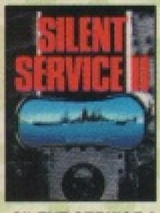

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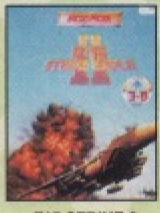

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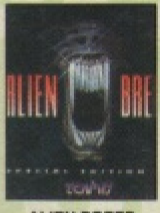

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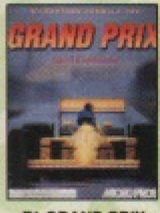

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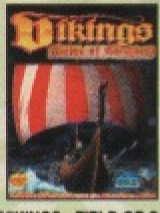

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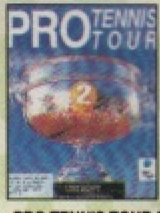

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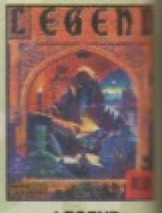

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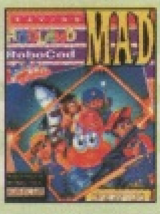

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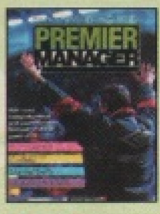

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SABRE TEAM
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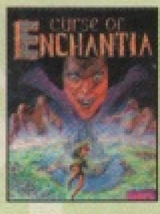

ASSASSIN
11.99

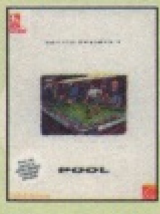

RAVING MAD
9.49

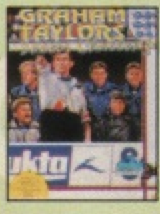

PREMIER MANAGER
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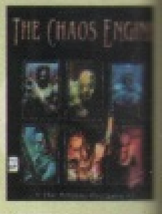

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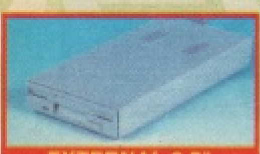
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CU NEWS

STOCKMARKET GAMBLERS?

If you thought playing *Street Fighter II* was hard you ought to try playing the Stock Market. Rumours are beginning to circulate that both Ocean and US Gold are going to do just that. The main reason that a company decides to float itself on the Stock Market is to raise extra capital from investors.

The stories about possible flotation started after a report in the Sunday Telegraph's City and Business Section and were picked up by trade magazine CTW. However, US Gold's Chairman Geoff Brown has strongly denied that they are considering such action. 'All we're doing is what any other firm is doing. To be in the business we're in is expensive and a lot of companies, from the largest to the smallest, are trying to fund that business... I think that The Telegraph just looked at our end of year results and thought "they're going to need some money" and put two and two together. But we are not going on the Stock Exchange.' Confirmation about Ocean's possible move too was not available.

SPEEDY PRINT

Seikosha have just announced the release of a powerful new inkjet printer, the Speedjet 300. The 300 of the title refers to its exceptionally high print speed of 300 characters per second at 10 CPI in letter quality.

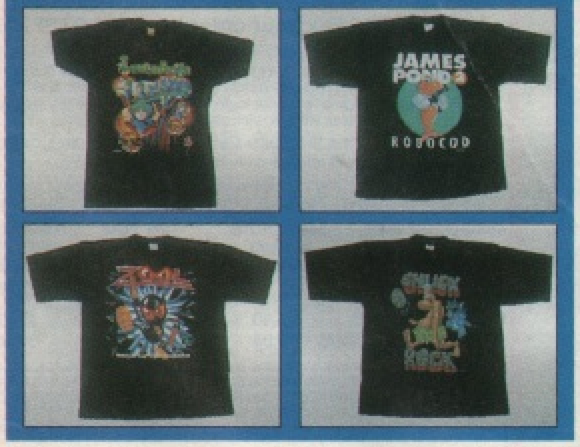
Although the printer uses similar technology to that found in the HP500 and Canon's BJ range of bubble jets, it uses a 128 jet print head capable of printing extremely high quality text using one of three built-in fonts. Strangely, despite its high number of print nozzles, the printer only manages a bog-standard 300 DPI in graphics mode.



Still, at a recommended retail of only £359.00, the Speedjet offers the highest print rate per pound of any ink jet printer.

GAME WEAR BY OUTER LIMITS

Do not adjust your magazine. We control the horizontal, we control the vertical, and for the next 20 seconds or so (depending on how fast you can read these words) we're going to tell you about some hot new t-shirts. London-based clothing company, Outer Limits, have just released a whole range of t-shirts based on characters from popular computer games. Touting their new tees as 'Softwear', the London-based company has signed up a whole swathe of characters from *Sonic* and *Zool* to *Chuck Rock* and *Lemmings*. Costing an incredibly reasonable £9.99, these trendy fashion accessories will make you incredibly popular at parties and will almost definitely help you pick up women. For further details, ring the Outer Limits' mail order hotline on 0272 768989!



WIN A FREE TEE

Yes, thanks to the unbridled generosity of Outer Limits, we've got 20 *Street Fighter II* T-shirts up for grabs. Usually costing £9.99 in the shops, these top shirts are the thing to be seen in this summer, winter... this decade really! But I can already hear you screaming for more, so here's how you could win one. Just answer this extremely easy question:

- Which popular US brand of T-shirt advertises itself as 'one that stays T-shaped'?

Quick, run and grab a pen and write the answer on the back of a postcard. Add to this jotting your name, address and size of T-shirt wanted (children or adult). Pop a stamp on the front and finish off by adding this address. 'I Want To Look As Great As Dan' Compo, CU Amiga, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. All entries to be in as soon as possible. Dan's decision is final and all the usual people are barred from entry. And don't think we don't know your handwriting, Mr. Horgan!

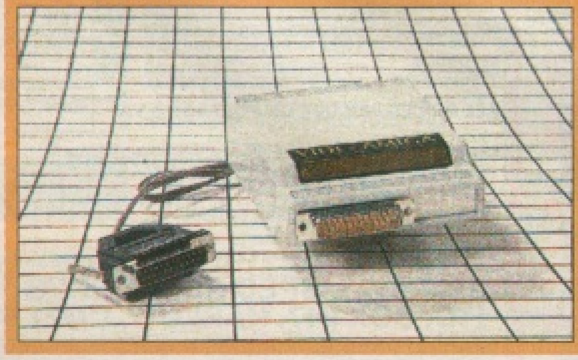


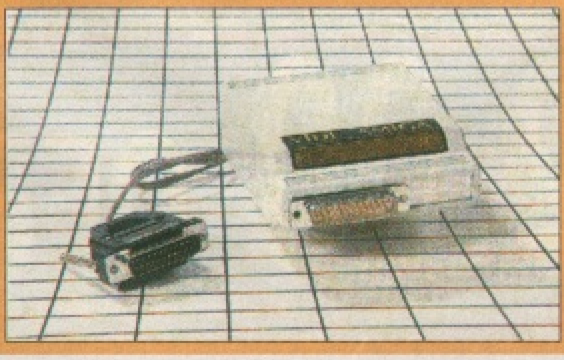
DIGITISERS FOR THE MASSES

Scottish budget digitiser specialists Rombo are putting the finishing touches to what promises to be two exciting additions to their line.

The first of these is called Vidi 12 (RT). RT? Real Time, of course. The digitiser is almost exactly the same as their Vidi 12 unit, but has the additional capability of capturing true 12-bit (4096 colours) images from a live source such as a video player or camera. It can grab in all screen modes including the new AGA displays. At only £199 Vidi 12 (RT) is the cheapest colour real time digitiser available.

Targeting the professional market as well, Rombo have released Vidi 24 (RT) a 24-bit version of Vidi 12 (RT). Again the digitiser is very competitively priced at only £299. Expect a full review of both units soon. In the meantime you can phone Rombo on 0506 414631.





AWARD WINNERS

Do It Yourself and DTP fans will doubtless be thrilled to learn that EM Computagraphic have got the rights to distribute the Award Construction Kit (ACK). Based quite closely on the old Award Maker program, ACK is described by EMC as a 'fun productivity program which can be used for quickly creating awards and certificates'.

The program is supplied with a variety of borders, typefaces and award styles which enable even the absolute beginner to put a decent-looking certificate together in minutes.

The program retails for £39.95, but for the first two months will carry an introductory price of only £29.95. Contact them on 0255 431389.

EM Computergraphic is a dedicated Amiga DTP Business specialising in the distribution of fonts and clipart.

New Horizon Computers

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New Horizon will collect your Amiga, fit the drive of your choice and deliver it back to you within 48 hours. Full 12 month RTB Warranty on your Computer when we install the drive. Wang UK carry out our repairs. Phone our Sales Hotline for further details.

☆☆☆ SPECIAL OFFER ☆☆☆

MONITORS



MODEL	SIZE	DOT	RES	SOUND	SCAN	PRICE
Philips 8833 Mk II	14"	.31	LOW	YES	15KHZ	POA
Commodore 1084 ST	14"	.31	LOW	YES	15KHZ	POA
Commodore 1960	14"	.31	MED	NO	MULTI	POA
Commodore 1940	14"	.39	MED	YES	DUAL	POA
Commodore 1942	14"	.28	MED	YES	DUAL	POA
Microvitec Cubscan	14"	.31	MED	NO	MULTI	POA
New Horizon Vanilla	15"	.28	HIGH	NO	MULTI	POA
New Horizon Vanilla	17"	.31	HIGH	NO	MULTI	POA

A1200 BLIZZARD

32 BIT TRAPDOOR MEMORY AND FPU ACCELERATORS

Includes Real Time Clock and Zero Wait State Memory

MODEL	CONFIGURATION	PRICE
A1200/4	4 MEG 32 BIT FAST MEMORY	£ 169.00
A1200/4A	4 MEG PLUS 14 MHZ 68881	£ 218.00
A1200/4B	4 MEG PLUS 20 MHZ 68882	£ 248.00
A1200/4C	4 MEG PLUS 33 MHZ 68882	£ 268.00
ADD4	ADDITIONAL 4 MEG MEMORY	£ 149.00

HOW TO ORDER

1. By Phone. Next Day Delivery on small items please add £5.00. Next Day Delivery on Computers, Monitors and Printers add £12.00.

2. By Post. Send a cheque or Postal Order made payable to New Horizon Computers and post with your Order to

New Horizon Computers (Mail Order)
High Hope, Lea,
Ross on Wye, Herefordshire, HR9 7LN

CREDIT CARDS WELCOME

VISA

SALES HOTLINE 0989 750260 TECH SUPPORT 0989 750337

BLUE RIBBON UPGRADES

Since they broke ties with music specialists Zone Distribution, Blue Ribbon have struggled to find another distributor who offered the same level of service.

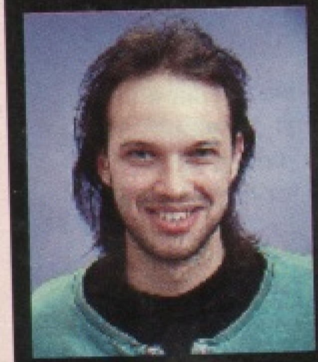
Now it seems that Meridian are to offer a full upgrade service on all Blue Ribbon products. So far the following prices have been announced: *Superjam V1.0* to *V1.1* £35.99 and *Bars & Pipes V1* to *Bars & Pipes Professional V2* £116.33

Meridian are also offering an upgrade to *Bars & Pipes Professional 2.0* from any other major sequencer (such as *Music X* or even *Deluxe Music*) for £199.95, a saving of £100.00.

It's also nice to see that Meridian are providing a Blue Ribbon technical support line in the UK on 081 332 6959. For details about any of the upgrades phone Meridian on 081 332 6959.



RUMOUR CORNER



• Commodore's shaky financial ground is proving a hot topic for gossip amongst the Amiga cognoscenti at the moment. It is true that CBM UK are going to cease pushing PC product to concentrate on the Amiga, it is true that people have been known to take their services elsewhere in recent times, but it doesn't look likely that the 'Big C' are going to seek protection from their creditors by filing for bankruptcy.

The situation is not quite so clear in the U.S. though, where recent redundancies and the sale of offices paint a sad corporate picture.

There have even been suggestions that CBM were to be bought out by a variety of both likely and unlikely sharks: Panasonic, Epson, Sony, Apple and a possible consortium headed by GVP and NewTek. The falling price of shares may make such a move easier, but as yet no buyers seem to be snapping.

• Joining the long history of outrageously rigged show demos are the pretenders to the console crown, 3DO. At the recent Consumer Electronics Show in Chicago, Panasonic (who are licensed to produce some of the 3DO console players) and 3DO both demonstrated 'finished" consoles and software. A quick look behind the scenes revealed that some screens were being driven not by the little players on show, but by a battery of Macintosh Quadras. Other models on show contained dedicated circuitry which was demonstrating only a few of the features promised in the real thing.

• People returning A4000 machines due to faults have had to wait rather a long time for repairs. Dealers are not satisfied with the situation because they can't get Wang to fix the faulty units. Wang reckon this is due to Commodore not supplying them with the parts. A spokesman for Commodore admitted that there had been delays, but these had now been sorted out. Part of the problem was a fault discovered on some early A4000s which caused overheating problems.

MICROPROSE CRASH AND BURN

Things are not well in the flight sim industry after US-based Microprose has been forced into a merger with fellow air enthusiasts, Spectrum Holobyte. It appears that the rumours about the shaky state of Microprose's finances have been confirmed by this move. The merger, set to complete on July 15th, will allow the company to make use of some $10 million supplied by Spectrum. In return the rival company will own 60 per cent of Microprose, making it the majority owner..

In recent years, the two firms have shared an uneasy alliance despite their rivalry, with the UK arm of Microprose serving as a distributor for Holobyte's European products. Unfortunately Microprose's position has been steadily eroded by a number of failed and mistimed business concepts, including a very late entry into the console market and an unsuccessful attempt to launch an arcade version of its hugely successful *F-15* game. These event have served to drag their earnings deeply into the red. They showed a total loss approaching $9.4 million in the last financial year.

There is some good news for games players though as there are no plans to drop either the Microprose or Holobyte brands and there will be no substantial changes to the UK or US operations.

GET YOUR RIBBONS RE-INKED

Despite their general price-friendliness the main problem with dot matrix printers is that sooner or later your ribbon is going to fade. New ribbons are not always very cheap. So it's good news for all that Caspell Computer have just contacted us about their environmentally friendly ribbon re-inking spray. Called simply Re-Ink, a single can of ozone free fluid can be used to refresh between 20 and 40 black ribbons. At an incredibly cheap £12.95 per can, your ribbons can be made as good as new for as little as 33 pence a time! Contact Caspell Computer by phoning 0202 717001.

CANON DISCOUNTS BUBBLES

Bubble jet technology just took another step towards total affordability with the announcement that the price of Canon's excellent BJ-200 has just been reduced by £70 to £349, excluding VAT. This will mean that the street price will probably be nearer to £250 or even £200.

The BJ-200 is one of Canon's prime home printers capable of printing at speeds up to 173 characters per second. Although this is not exceptional, the fact that it uses bubble jet technology to deliver ink at up to 360 DPI makes it more exciting.

The printer comes with an automatic sheet feeder capable of holding up to 80 sheets of paper, and its unique vertical design means that it occupies very little desk space making it ideal for desktop use.

Its quiet operation (less than 46 decibels) means that it's as friendly to your ears as it is to your pocket. Contact Canon on 0800 252223. Alternatively visit your local computer shop for a demonstration.

WE NEED YOU

CU Amiga welcomes any hot news or show details that you may have. Send them to NEWS, CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. Alternatively you could fax information to us on 071 972 6701. If it's really important, you could phone us on any Friday to let us know what's up.

SHORTS

Gasteiner Technology has just become the official UK distributor for *True Paint*, the premium 24-bit paint package from BSC Software in Germany. Phone Gasteiner on 081 365 1151. • The continuing saga that is *Music X 2* took another turn this week as publishers The Software Business sheepishly announced that it would in fact be delayed for another three months. The reason? Nobody has written any manuals for it! • Printer Ink Company System Insight have just demonstrated their all-new bubble jet refill kit design which features built in syringes for hands-clean cartridge refilling. They've also taken over the manufacture of ink under licence from US company Inkmun. • *Poolsmaster* gets a facelift after three years in its original form. Mail order specialists Intraset have finally announced a total revamp of their *Poolsmaster* pools prediction software. • Kuma books have just released a book aimed at desk top publishing students. Unimaginatively called 'Students Guide to Desk Top Publishing' the book retails for a very reasonable £9.95 and aims to complement conventional DTP courses such as those offered by many colleges and night schools.
• Golden Image are offering their AlfaPower hard drive kit for the A500. Designed to be used with a single 3.5 inch or two 2.5 inch IDE drives, the unit also has space for up to 8Mb of RAM. At £99, it seems fairly priced, although it's questionable how much call there is for an IDE interface on the A500. • Rumours circulated in the trade press this week that both US Gold and Ocean were to go public. US Gold denied the reports, although not absolutely, and Ocean were not available for comment. • Future Publishing have just released two titles aimed at novice users. The diminutive 'Pocket Workbench & AmigaDOS Reference' is horribly over-priced at £9.95, but more reasonably at £19.95 'Get the Most out of your Amiga 93' is a collection of hints, comments and reviews covering everything from games to hardware. • Siren software offer an £80 discount on the 4Mb Turbotech card for the A1200. The card also includes a built-in clock and now retails for the unexcep-

MINDSCAPE MEANS MONEY

It's not all doom and gloom in the games world this month with the announcement that Mindscape has turned in a profit of over $3 million for the last year.

Much of that figure is directly attributable to floppy sales which continue to be buoyant despite intense pressure from the cartridge market. The CD-ROM market is turning out to be a good source of profit too with Mindscape claiming that they are the world's largest publisher of that format, having shipped three million discs in three years. With that much time and capital invested in the CD format it's likely that Mindscape will also play a major part in Commodore's new CD32 console.

COMMODORE WRITES



Our hotline to Commodore has borne fruit once more. David Pleasance, the UK General Manager, talks about their hopes and plans for the new Amiga CD32.

WELCOME

Welcome, once more, to my monthly column dedicated to telling you about what we at Commodore are doing. I'm very pleased to have been given the opportunity to talk directly with you as it is one of the few ways that you can acquire accurate information about developments here. There are many false rumours circulating on, amongst other things, bulletin boards. It would take far too much space to discuss all those issues in this column but suffice it to say that unless you read it here you cannot guarantee its veracity.

On the subject of rumours you've probably heard a lot about a new 32 bit Amiga CD machine. Well, I can reveal that it does actually exist. In fact, it received its official press launch on 16th July. As you can read more about our amazing new product elsewhere in this issue, I would like to use this space to discuss some of the plans and hopes that we have for its future.

PRICE AND POWER

We have priced it at £299 retail which is, I believe, a very competitive price for such a high specification machine. When you look at the current state of the market it is clear that a less than £300 price point is actually very cheap. The only thing that you can compare it to realistically at this stage is the Mega CD. In order to get into that technology you first have to purchase a Megadrive at £129 before spending £270 on the CD player. You can work the figures out for yourselves but I think that it is obvious who, on that comparison alone, is offering the better value for money.

In some respects I am actually quite reluctant to compare the two machines simply because technically there is no comparison. We have a machine incorporating 32 bit technology, a 68020 processor and our own AGA chipset which makes it far beyond anything yet available. Also, we have incredible support from software publishers with some 18 games already available at launch. The majority of these have appeared first on the CD and are not basic conversions of existing products. I cannot promise it but it is almost certain that there will be close to 50 games available for the CD32 by Christmas. The nearest that Sega can come to anything like this is placing a story in the trade press saying that they have such a machine but it's over two years away from launch!

OWN UP

As for existing Amiga owners, you can rest assured that we will continue to support our current machines. We learned a lot from our experience with the CDTV and we have used that knowledge in our design and marketing of the CD32. On the subject of the CDTV, we are presently considering whether to offer an upgrade deal for CDTV owners. A decision has not yet been reached but, as soon as we decide, I will notify you.

One further peripheral that will definitely be available before Christmas is a Full Motion Video add-on. This will give your CD32 the capability to run full screen live action videos direct from CD. The music industry is extremely excited by this and there are a number of albums already available that contain both sound and vision. It won't be long before the film industry too attacks this market with gusto as it gives them the ability to all but eradicate video piracy.

To sum up, you can rest assured that the CD32 really is the future of home entertainment. Commodore has made mistakes in the past when launching new products but we have learnt from them. They will not occur again. This machine has extremely advanced technology, unprecedented software support and the backing of a company with unrivalled experience of both the games and CD market. It will not fail.

CU AMIGA would like to stress that the views expressed herein do not necessarily reflect those of the publishers.

WRITE BACK!

One reason for setting up this column was for it to serve as a direct link between Commodore and our readers. So, what we'd like you to do is get writing. Judging by the volume of mail we receive every month you have plenty to say about Commodore, so now's your chance to put those questions directly to David Pleasance himself. No matter how controversial, no matter how difficult David will endeavour to answer every one.

Send your questions to: Commodore Writes, c/o CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.

COVERDISK 62



On this month's coverdisk we have the answer to all your text fantasies. A fully-fledged, fully working word processor, complete with a 115,000 word dictionary. Aren't we nice?

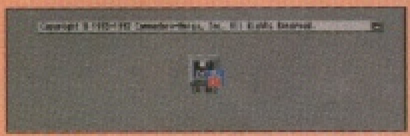
INTERWORD

YOUR QUICKSTART GUIDE TO LOADING DISK 62

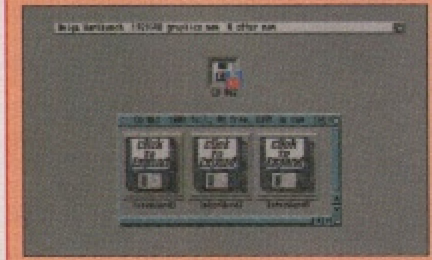
To create your set of Interword disks, all you have to do is follow the steps below



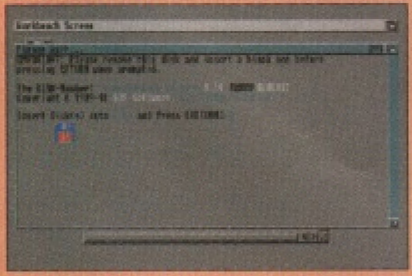
1. Have four disks you don't like anymore ready to be copied onto, and write-protect your coverdisk by moving the plastic tab at the rear until you can see through the hole.



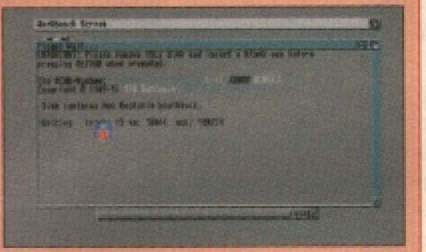
2. Switch on your machine and insert the CU62 disk. Wait for Workbench to load and double click on the disks icon.



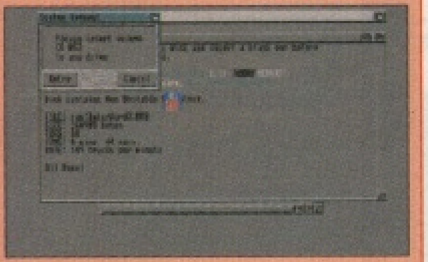
3. A window will appear, containing three disk-like icons. These are the scripts for unarchiving the program and they all work in a similar way.



4. Double click on the icon of the disk you wish to create. A shell will open and the disk will be accessed while the file is copied into RAM:. This may take a while, but don't worry.



5. The DMS program will ask you to insert a blank disk. Do not press any keys until you have removed the coverdisk. Take out the coverdisk and insert one of the blank disks. Follow the on-screen prompts.



6. When the disk has been completed you will be asked to replace the disk CU62. Do this.



7. Repeat steps 4 to 6 for the other icons, until you have a set of three disks.

8. The fourth disk is contained on the second coverdisk. Reset your machine and boot from this disk and open the window as before.

9. Repeat steps 4 to 6 for the disk icon that you will find.

10. You now have all four disks of the Interword set.

11. Reset your Amiga Boot from your workbench disk or hard-drive and insert the Interword disk. Double-click on the Interword Icon to start the program.

IMPORTANT The Interword package has been stored in four compressed files, three of which are contained on Disk 62, the other is on CU Disk 63. You will need both disks handy to uncompress these files, and four blank disks to put them on.

USING INTERWORD

When *InterWord* has loaded, you'll be greeted by the main window which has some icons at the top of the screen, a couple of scroll bars running down the edge and along the bottom of the window, and a large empty area occupying the main portion of the screen.

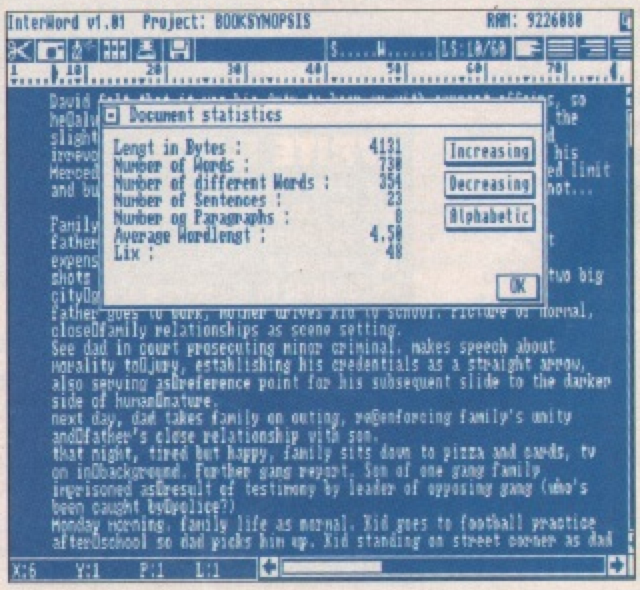
The window is where text will appear as you type. When your text reaches the end of a line any words that are too long to fit on the current line will automatically be moved down to the start of the line below, a process known as word wrap. The words in the line above will then be spaced out according to your preference. This is called justification. There are four types of justification represented by the icons at the top right of the screen. The default is Ragged or Left justification. This means that each line of text is lined up against the left hand edge of the page. The next option is Flush justified. When this is selected spaces are inserted in the text so that it is lined up against both edges of the page. Right justification simply lines the text up against the right-hand margin of the page. The final option is Centre justified and it simply aligns the text so that it is an equal distance from each margin.

Speaking of margins, you can set left and right margins using the ruler at the top of the screen. The ruler is divided into characters, and if you look at position 76 you'll see a large arrow pointing back towards the number 70. This is the right margin character. To alter the right margin simply select this arrow with the left mouse button and keeping the button pressed, drag the margin to its new location.

If a block of text is highlighted, the new margin will apply to the highlighted text only. If no text is highlighted the new margin will apply to all text from the current text cursor position.

TEXT DEFAULT

By default the text cursor is simply a flashing white rectangle, but you can change it to an underline character using the cursor option in the project/Preferences menu. To highlight a block of text move the pointer to the start of the block of text then press and hold the left mouse button whilst you drag the pointer to



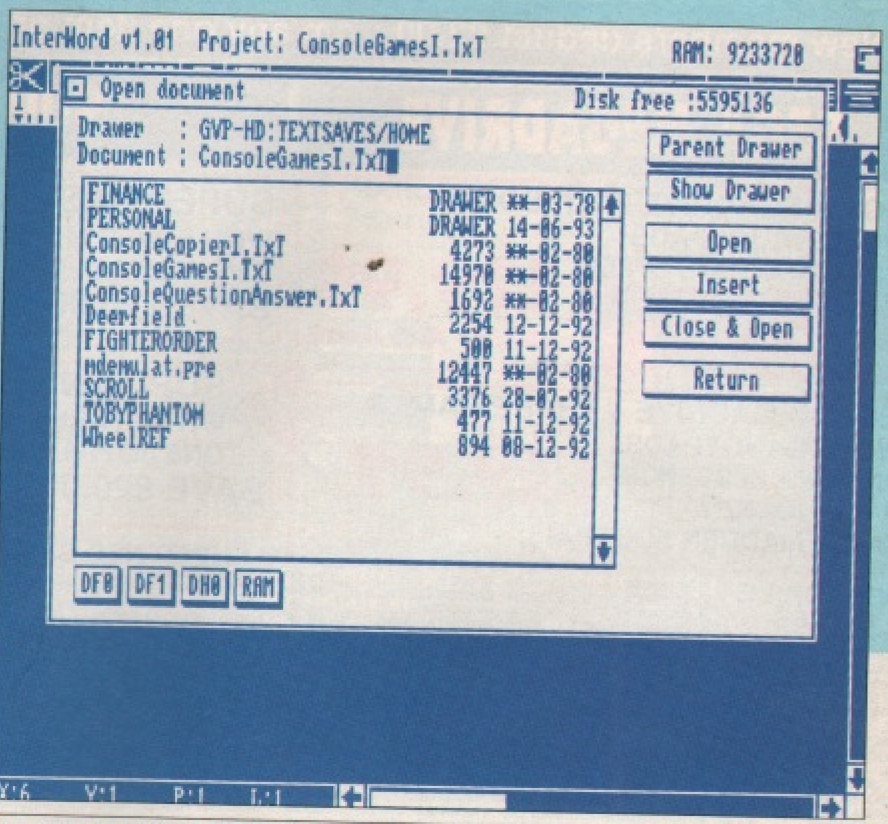
Select the Statistics option and *InterWord* will provide you with information about your document. The most useful of these is called LIX — short for Legibility Index. It tells you how readable your document is.

DISK VIRUSES

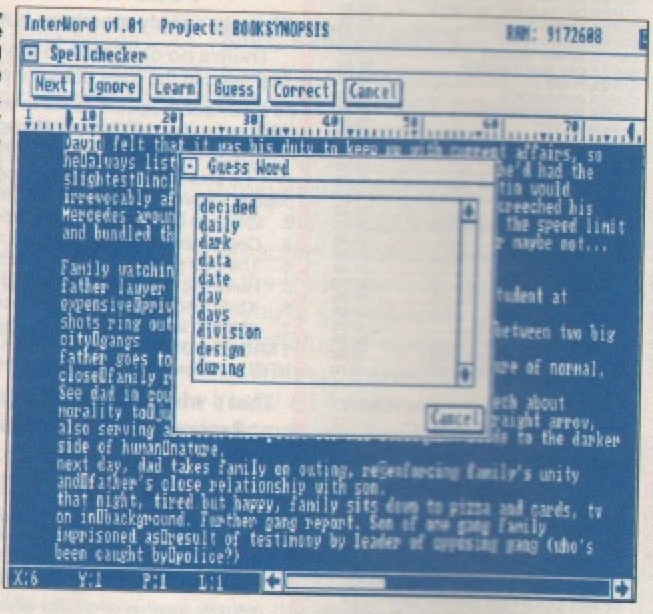
CU AMIGA makes every effort to ensure that viruses do not get on to our disks, and we aim to include a virus checker on the disk whenever possible. Unfortunately, because of the nature of viruses, the virus killers can only be updated to include a new strain when it has already become known – i.e. ruined a few disks and made a nuisance of itself. Fortunately we always have the most advanced virus checkers available when the disk is compiled and every program goes through a rigorous regime of testing before it appears on our coverdisks. However, we can accept no responsibility for possible damage incurred by viruses which may have escaped our attention.

IF YOUR DISK WON'T LOAD

If your coverdisk doesn't seem to work as it should, then follow this simple guideline. Firstly, remove all unnecessary peripherals, such as printers, modems etc. Follow the instructions on these pages to the letter, and if after that you find that the disk still doesn't work, call the PC Wise helpline on 0685 350505 between 1030 and 1230 Monday to Friday. If they advise you that the disk is faulty, then pop it in an envelope with a covering letter explaining what the problem is to: CU DISK RETURNS, PC WISE, DOWLAIS TOP BUSINESS PARK, MERTHYR TYDFIL, MID-GLAMORGAN, CF46 2YY. Please include 28p per disk to cover postage and packing (55p for overseas readers). Your disk will be tested and a new, working one dispatched to you as soon as possible. Please note that neither we nor PC Wise accept responsibility for any disks damaged due to negligence on the part of the user.



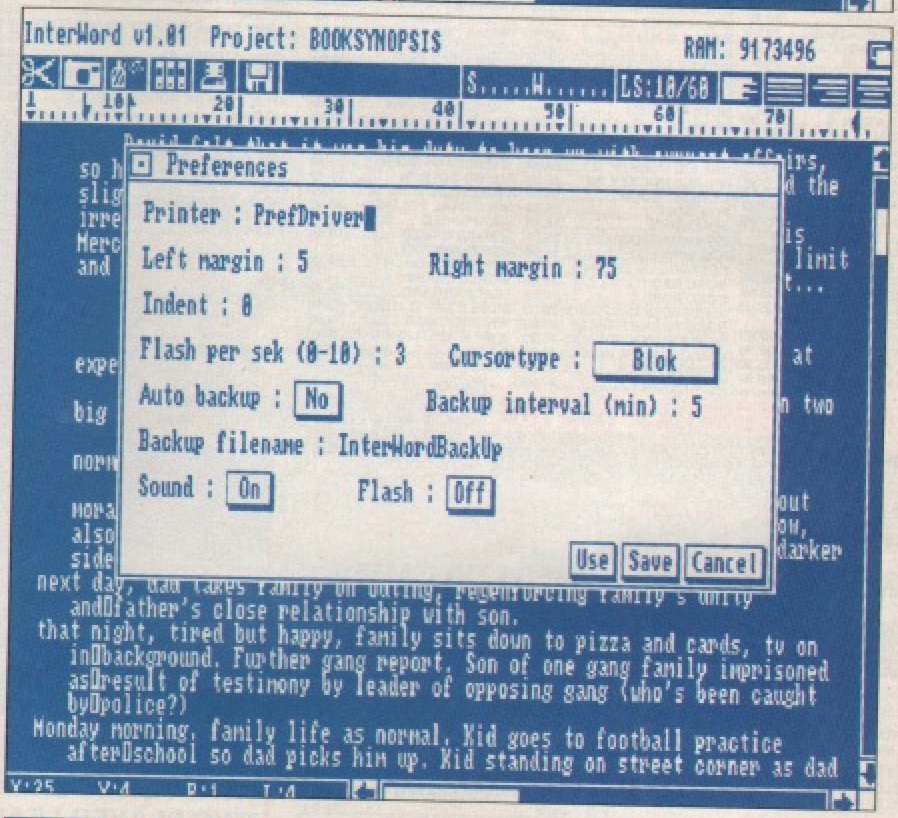
If you misspell a word, click Guess and the spell checker will attempt to provide the correctly spelt version. All that remains is for you to click on the appropriate word and it will replace the duff one.



the end of the text area that you want to select.

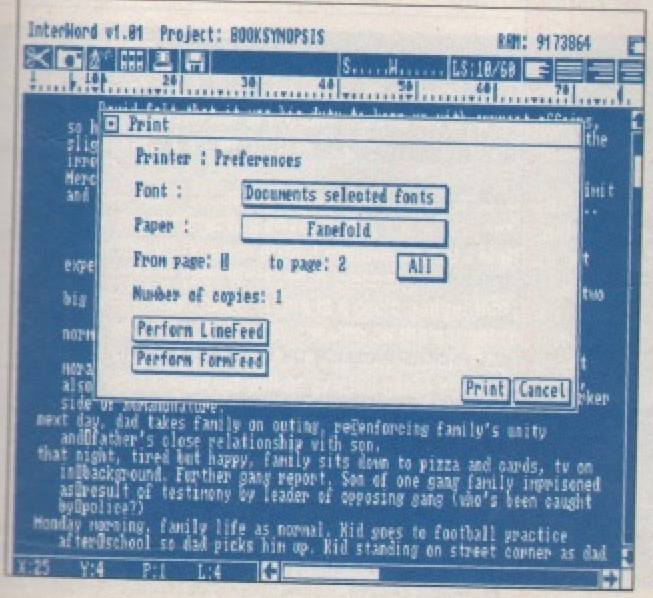
Returning to the subject of margins for a second, you'll notice that the left margin arrow actually consists of two small triangles which can be moved independently of each other.

The top triangle represents the paragraph indent, whilst the bottom one simply denotes the left margin. In word processing terms, whenever you press the Return key to start a new line, you are considered to have begun a new paragraph. *InterWord* will interpret these new paragraphs according to the paragraph indent that you set on the ruler, so if you want your paragraphs to be indented by five characters, simply drag the top triangle five characters to the right of the lower one.

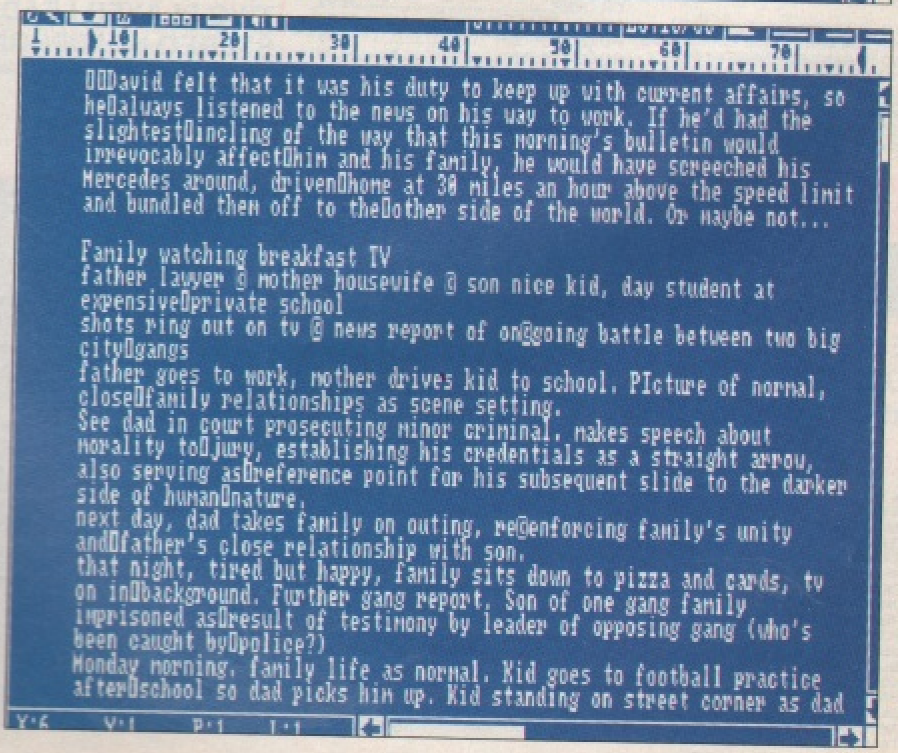


SAVE OPTION

Of course, there's no point doing all this work if you can't save, and the way to do that is to select Save As from the Project menu. A file requester will open up where you can specify both the name to be given to your text file, and the place that it will be stored. At the bottom of the requester are a number of gadgets labelled DF0, DF1, RAM etc. These gadgets represent the devices where you can store files. If you only have a single drive the only options will be DF0 and RAM.



Click the button corresponding to the disk where you want to store your file. Do not save your text files on your program disk under any circumstances. If needs be, return to Workbench and for-



The icons at the top of the screen can be used to save time. Reading from left to right they are Cut, Copy, Paste, Print, Select Document and Disk Operations.

Printers are very well supported through the *Interword* drivers.

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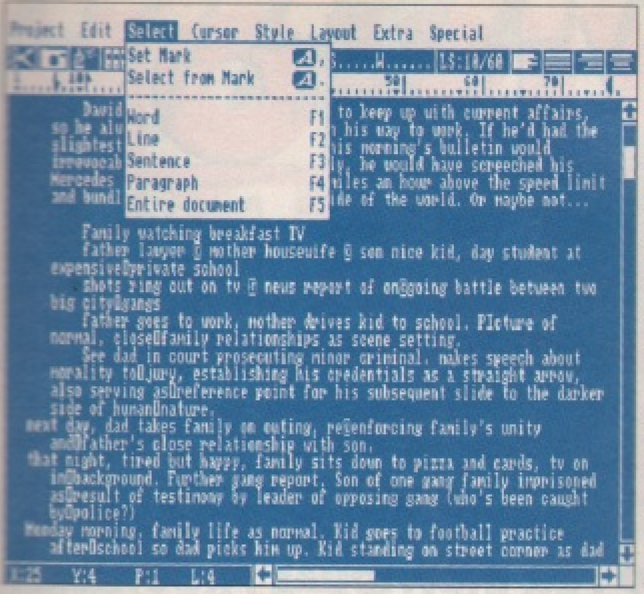
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mat a blank disk to save your text files onto.

Once you've clicked the button corresponding to your chosen drive, the contents of any disks in that drive will be shown in the main directory window (above the device buttons). If you want to store yo ur file inside a drawer on the disk, click the name of the drawer in the directory window and the contents of the drawer will appear in the window.

When you've reached the appropriate place, click in the text gadget labelled Document at the top of the window. A text cursor should appear. Unless you want to store your document using the name that already appears in this gadget, use the delete and backspace keys to erase any text. Then type in the name that you want to save your file under.

When you've given your file a name, look at the buttons at the right of the save requestor. You'll notice that one of them is labelled Save. Click this button and your document will be stored to disk in *InterWord*'s own proprietory format. Alternatively, click the button labelled Save ASCII and your document will be stored in ASCII format so that it can be loaded into any other text editor or word processor. The only restriction is that an ASCII save does not save text formatting or styling information. The final save option is Save Locked. Again this stores your document on disk in *InterWord*'s own special format. However, before the file is saved you will be asked for a password which will be encrypted into the save file. This password will then be required before the file can be reloaded.

To reload a file, select Open document then follow the same procedure as you to save one. You can either type in the file name if you remember it, or you can click on the name in the directory window below.

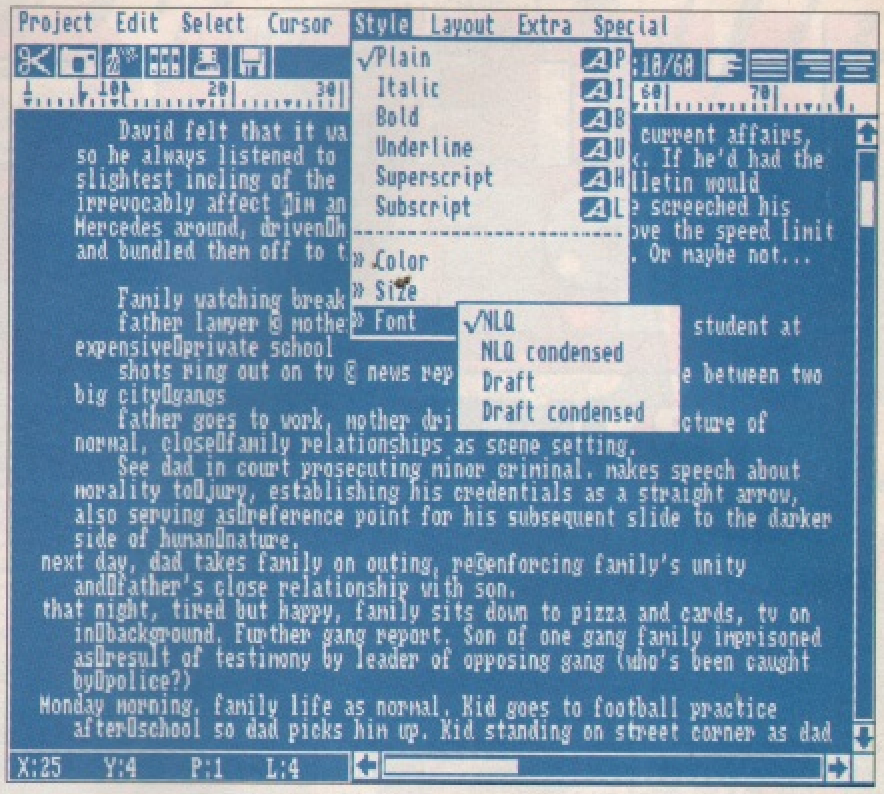
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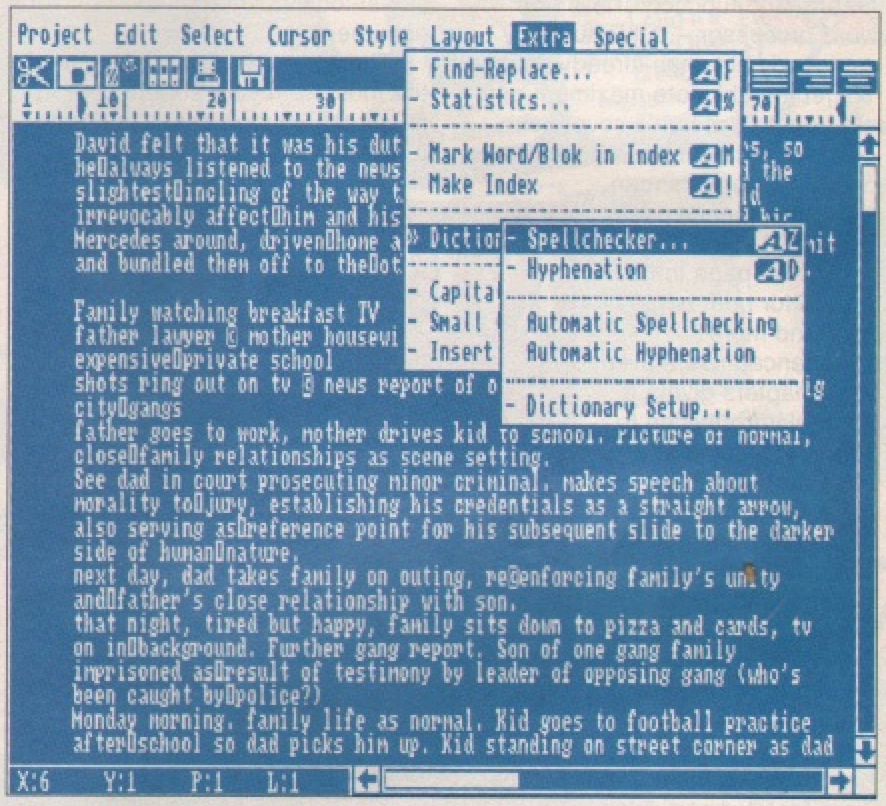
InterWord includes a comprehensive dictionary. To check your spelling as you type, select Dictionary/Automatic Spellchecking from the Extras menu. From now on, if you make a spelling error, the screen will flash or a beep will sound according to your settings in the Preferences menu. It's then up to you to use the spelling checker to find alternative spellings.

When you select Spellchecker from the Dictionary menu *InterWord* automatically begins checking your document using the dictionary settings specified in the Dictionary Setup option.

If it encounters a word that it doesn't recognise, it stops and highlights the word for you to choose one of the options in the Spellchecker requestor. The most useful of these is Guess, which tells *InterWord* to try to guess the correct spelling. It will search its dictionaries to find any words that begin with the same letters and all matches will be displayed in a list. Assuming the correctly spelled word appears in this list, simply click on it, and it will replace the misspelt one.

If the Spell checker queries a correctly spelled word (somebody's name for instance), click Learn and the program will add the word to its own dictionary for future reference.





Interword has a truly gargantuan dictionary. If it can't find your word, then you've probably either misspelt it or made it up. The dictionaries are contained on five disks, so you may want to have a look at the setup options to avoid too much disk swapping.

PRINTING

When you want to print your *InterWord* document, select Print from the Project menu (or click the Printer icon at the top of the screen) and the print requestor will appear. Although this requestor is similar to the Workbench Printer requestor, there are a few important differences.

At the top of the requestor, you'll see the name of the printer driver that will be used. This will be the preferences driver that is set up on your Workbench disk. If you don't know how to alter the Workbench printer preferences, it's worthwhile taking the time to read the relevant chapter in your Workbench manual.

Below the printer driver name is a cycle gadget that lets you determine the type of fonts that your document will use. By clicking on the gadget repeatedly, you can select from a number of choices. For now, there are only two choices to worry about, NLQ and Draft. If you select NLQ your document will be printed using your printer's best quality typeface. Select draft and the document will be printed in a draft typeface which is poorer in quality, but much faster to print.

Unlike most word processors, *InterWord* allows you to apply draft and NLQ styles to your text AT ANY POINT, even in the middle of a line. If you highlight a block of text and go to the Font option in the Style menu, you'll see the NLQ and draft listed. Simply select the one that you want, and it will be applied to the highlighted text.

This facility explains the third option in the Print/Font cycle gadget which is 'Document's selected fonts'. If this option is selected, all font quality changes in your document will be acted upon, whereas the NLQ and Draft options simply apply the chosen style to all text in your document.

Below the Font gadget you can specify how many and which pages are to be printed. If you only want to print a specific range of pages from a multi-page document, you can enter the first and last page numbe rs in the From and To gadgets. However, if you are printing pages which will be bound in a folder or book for example, you can choose to print only the left or right facing pages. This allows you to print a document on both sides of a piece of paper, starting first with the pages on one side, then the other. Again, you can make your choice using the cycle gadget. It contains three options: All, Even and Odd, and whichever option is visible is the one that will be used.

The last few options in the Print requestor are self-explanatory. Number of Copies indicates how many times the selected pages are to be printed. Perform Linefeed tells the printer to move the print head down a line, whilst Perform Form Feed tells the printer to move the print head to the start of a new page. Needless to say, Print tells InterWord to commence printing. Once Printing has begun, Cancel tells InterWord to stop printing and send a stop command to your printer. If your printer has a memory buffer, the stop command will only be executed once the contents of the buffer have been printed.

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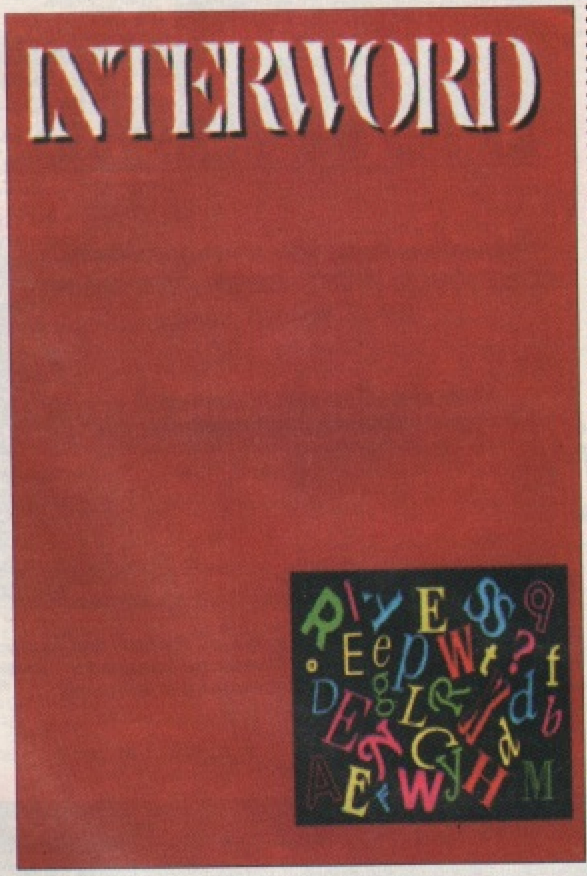
Now that you've got to grips with *InterWord* on this month's coverdisk, you've doubtless discovered what a top-notch program it is. Of course we could go on for page after page and still not cover every feature and function of this fine word processor – but fortunately somebody else has already done it. To get the absolute maximum benefit from this month's coverdisk giveaway, why not purchase the original program's manual at the special price of only £7.99?

The 54-page tome is written for both beginners and more experienced users alike, with chapters giving a general introduction to word processing and ones that cover the more advanced features of the program including line-spacing, palette options, and preferences. You will find that *InterWord* is easily configured to work the way you want it to, and this manual will show you how to set up the software for your particular needs.

The manual gives full details on how to use your printer with *InterWord* and even goes as far as letting you define new printer drivers using only your printer manual for reference.

The manual also explains hard disk installation and gives a full breakdown of *InterWord's* comprehensive menu system. It really is an invaluable aid to producing professional-looking letters and documents.

There's no time to waste – to get the most from your super coverdisk, fill out the coupon below and return it without delay!



OFFER TWO INTEROFFICE ONLY £29.99

(OR £19.99 FOR INDIVIDUAL PROGRAMS)

InterOffice is a completely integrated software package – it comprises three programs, all of which are geared to squeezing the last drop of power out of your Amiga (and your software budget). We've put together an amazing deal for CU Amiga readers so that you can either buy the complete package at a rock bottom price, or individually purchase programs at a substantial discount.

InterOffice comes equipped with:

• INTERBASE

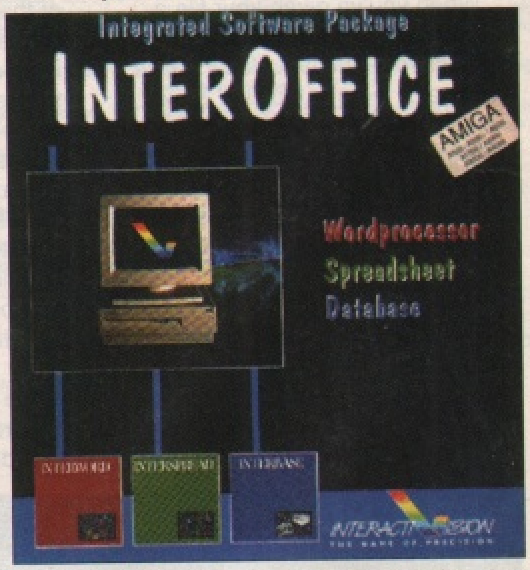
Whether you want a catalogue of your CD collection or an indexed list of all English speaking contacts on Osaka, the answer has to be *InterBase*. When CU AMIGA reviewed this versatile database a couple of years ago, we said at the time that 'it's a high quality database system and it seems that flexibility and reliability have been given the highest priority'. A full screen interface allows flexible construction of layouts to make this package not only extremely powerful, but also easy to use. All the search and filter functions you would expect from a professional package are present in this multitasking relational database.

• INTERSPREAD

If you need help in reconstructing a vast financial empire or just want to budget your pocket money, *InterSpread* is probably the package for you. Why bother working out how much you owe the loan-sharks with a pencil and paper when over 60 mathematical functions are at your command in a truly gargantuan program which can handle worksheets up to 3000 by 10,000 cells. To ease repetitive tasks there is an extensive macro utility and your results can be displayed on screen in virtually any graph format you could imagine. With *InterSpread* you need never fear your bank manager again.

• INTERWORD

We're not suggesting that you cough up the readies for this one, as we've just given it away free on this month's coverdisk, but you will get the manual thrown in for free if you opt to buy the complete InterOffice program. Are we good to you or what?!



Please post to: Interactivision Offers, Kompart UK, Guildford House, 20 Guildford Road, St. Albans, Herts AL1 5JY

PLEASE SEND ME:

- ☐ **INTERWORD MANUAL @ £7.99**
- ☐ **INTEROFFICE @ £29.99**
- ☐ **INTERSPREAD @ £19.99**
- ☐ **INTERBASE @ £19.99**

I enclose a cheque for £ , made payable to Kompart UK. Please add £1.50 for postage and packing.

ACCESS/VISA card no.:..EXPIRY DATE..

Name on credit card: ....

Please supply credit card holder's address if different from the address above.

Signature: ....

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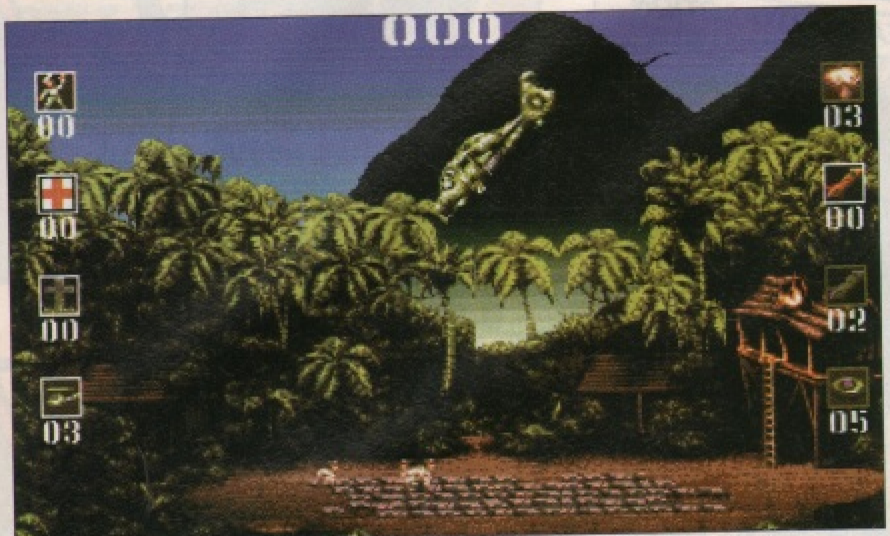

COMPUTER AND CVG VIDEO GAMES
GREAT GUY
JUST ANOTHER DAY...
Gosh, thank heavens for CVG, making me look great and enabling me to have a brilliant life! More drinks, girls?
You're so dreamy Great Guy. And it's all thanks to CVG!
ON THE WAY HOME...
Hmmm, the bus is a bit late today.
BUT THEN...
INFIDEL! We are the Shining Brothers of Dawn, and we are going to hijack the bus and take it to, erm, somewhere completely naff!
Yes, indeed we are.
GREAT GUY LEAPS INTO ACTION...
OH NO YOU'RE NOT!
CVG! AAIEEE!
THE NEXT DAY, AT NUMBER 10...
Well done, Mr Guy! And it's all due to this CVG magazine, I believe.
That's right, Mr Prime Minister
AND SO, AT MI5's SECRET SPY HQ...
Mr Guy, yet more crackpot terrorists are attempting to detsroy everything we stand for! As a reader of CVG only you can stop them!
Leave it to me, Mr Spy – I won't let you down!
CRASH! BANG! WALLOP! ETC!
BACK IN LONDON...
AMAZING! How do you do it, Great Guy?
Your problems are over, Mr Spy! The insurgents have been wiped out! Oh yes – and I've eliminated world hunger and poverty as well.
LATER, IN THE YOUTH CLUB...
It's all thanks to CVG!
Excuse me, do you come here often?
Bog off, urchin!
GUMPH!
Have you noticed I read CVG?
Oh, that's different, then. Can I have a wet snog?
AND SO ON...
AND THE MORAL IS... HERE AT CVG WE KNOW THAT GAMES PLAYERS LEAD RICH AND REWARDING LIVES. WE THINK YOU'RE GREAT, SO PLEASE BUY CVG. BY THE WAY, DID WE MENTION THAT WE THINK YOU'RE ALL GREAT?
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THE MOST MACHINES MOST REVIEWS 164 PAGES!
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AMIGA PC
MEGA CD
NEO GEO
MASTER SYSTEM
NINTENDO
PC ENGINE
CD ROM
FREE! TIPS BOOK!
FREE!

COVERDISK 63

This month we give you a completely playable level of Virgin's up and coming *Choplifter*-style shoot 'em up *Apocalypse*.



APOCALYPSE


Those little guys in the white coats are the POWs. At least they keep them clean!

Apocalypse is very similar to an old arcade favourite of ours by the name of *Choplifter*. In that game, you flew a rescue helicopter across a variety of scenarios, from collecting POWs to rescuing people from burning ships. In our demo of *Apocalypse*, you begin your duty on a launch pad somewhere in the middle of a dense forest. Somewhere out there are POWs, and by golly you're the person to go and get them!

The entire game zone lies to the left of the base, so take off by pushing up, and then move the joystick to the left to fly in that direction. If you find you are flying backwards, use the fire button in conjunction with the direction you want to fly to turn around. At first glance, you probably won't find much. That's because all the huts and enemy are to be found lower down in the jungle, so drop a little and keep searching.

HUTS

Before too long, you should come across a flat platform with a couple of huts on it. The huts are where all the people in the game are hiding, be they POWs or enemy soldiers. To let them out, shoot the huts with your cannon (hold down the fire button to release a stream of bullets) until the hut explodes. Then a few people will scamper out of the burning buildings. If they are dressed in white, then they are POWs and are just waiting to be collected. To get them, gently lower the copter to the ground and your side door will open automatically. The men in white will rush towards you and climb aboard. It is vitally important that you don't open fire at this point.

If, on the other hand, the soldiers that emerge are dressed in green, then treat them as a threat whether firing or not. These are the enemy soldiers – scourge of the world, and deserve nothing more than to be blown sky high by a well-aimed volley of bullets. Fly past them a couple of times with guns firing and laugh hysterically as they scream and bounce into the air!

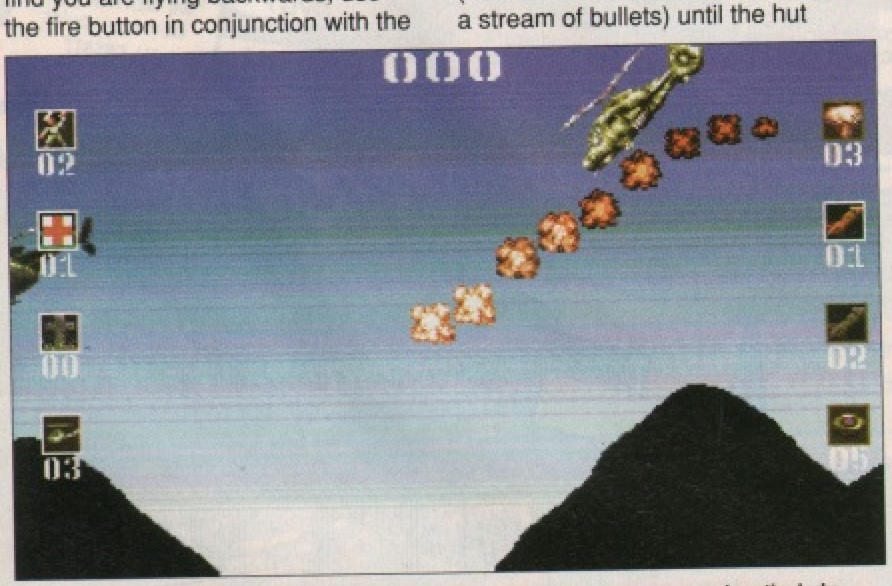

Land on the pad to the right of your own to collect a medical team.

CHOICES

Once you have some POWs aboard, you can do one of two things. You can continue through the battlefield to collect some more, or you can head back to base to drop off those already in the back. To drop them off, turn to the right and fly back to base, and land on the launch pad. The side door will open again and the thankful cargo will dash to safety. Now you can fly back out to the danger zone and do a little more rescuing.

Occasionally, POWs will get injured by a stray bullet or attacks from the enemy. If you like, you can leave them to die, but I'd be surprised if you could sleep with yourself afterwards. The correct procedure is to head back to base, fly past your own landing pad and land on the one next to the tent with the red cross painted on it. Your doors will open and a medical team will climb aboard. Now fly back to the injured men, land, and the medics will rush out collecting the bodies.

That's about all there is to it. By the way, watch out for the enemy helicopters performing bombing and strafing runs all the time. Knock them out as soon as you spot them, or they'll make your life hell!


The enemy helicopter causing death and devastation throughout the camps and particularly towards you!


Launching nuclear homing missiles are the only easy way to down enemy pilots.

THE FOUR WEAPONS

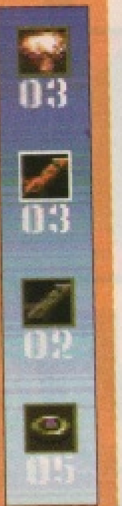
Along with the standard cannons, there are four special weapons for you to fight with, fired by quickly double-clicking on the joystick button. These are shown by the four icons down the right side of the screen. To select a weapon, press the space bar to pause the game, then use the joystick to highlight the one you want. And here they are, in all their glory!

An extremely high-powered projectile weapon that'll eat through anything! Needs to be aimed by pointing at your target and then firing.

Not as powerful as the nuclear rocket, but at least you can fire and forget this one, and it'll track enemy aircraft to their doom.

Harder and faster than bullets, this needs to be aimed in the same way as the Nuclear Rocket. Best suited to ground targets.

These drop from the underside of your chopper and lie innocently on the ground until someone walks onto them, at which point it's sushi time!



The BBC Radio 1's
TV and Radio presenter



INDI DIRECT MAIL
Proudly Presents
THE
JAKKI BRAMBLES COLUMN

Hi,

Commodores decision to reduce the price of the Amiga 600 took everyone by surprise and really positions the A600 as the perfect entry level computer .

Of course the problem with new technology is that something has to be left behind and in Commodores case it's the poor old 500.

Now Indi tell me that Commodore are taking back all old A500's when you buy a new state of the art Amiga 1200. So dust off that old A500 make sure that it is in full working order and you still have the mouse, modulator, manuals and power pack. Give Indi a call on **0543 419999** and ask for **"Amiga 500 Trade in Desk"**, Indi will send Securicor to your home and pick up your A500 at their cost and then deliver a superb new Amiga 1200 with **£100 off** the advertised price. Remember this is a limited offer

What's a PCMCIA slot I ask? Indi explained to me that its Commodores way of ensuring that both the Amiga 600 and 1200 can remain future proof. Credit card style memory cards are already available from Indi but thats just the beginning, faxes, modems and network cards are on their way and who knows what else. If you need to know more about PCMCIA why not drop me a line.

On the subject of letters I have been swamped. It's absolutely great and I promise each one will be responded to and get a signed photograph so keep them coming! Last months winning letter came from **Adrian Simpson of County Down** Northern Ireland who gave a very well informed comparison between Amiga and less useful consoles.

I was absolutely knocked out with all the details he sent me concerning the music capabilities of the Amiga. Adrians letter was far too detailed to reprint but a big thankyou to him for writing it. Adrian the prize is on its way.

WHAT DOES THIS SYMBOL MEAN

DIRECT MARKETING ASSOCIATION

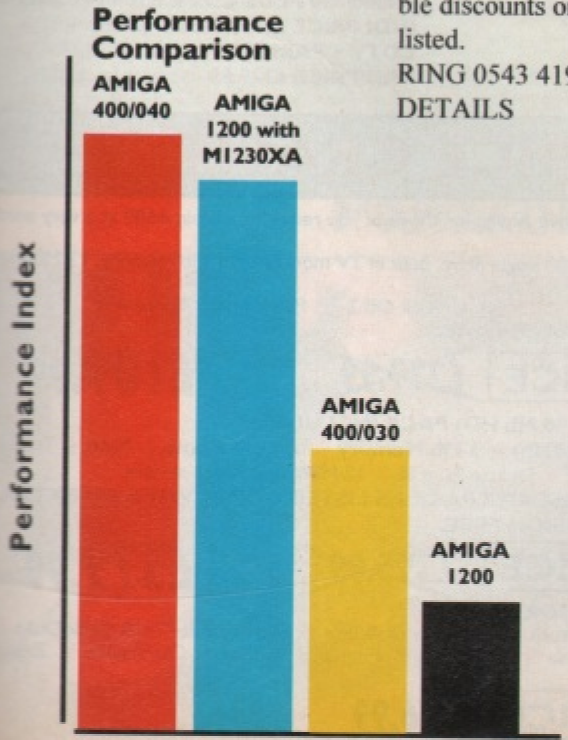
Finally I received a few important letters asking what is the **DMA** and why is it important to consumers that Indi is part of it. On thais page you will find a letter from the Chairman of the DMA, it's well worth a read.

Jakki Brambles

NEW MEGA A1200!

Due to the shortage of A4000 / 030 INDI are nowoffering a mega A1200 configuration. Just look at this spec A1200 * 4 MEG RAM * 80 Meg HD * M1230 XA 50 Meg HZ .Runs @ 1.5 times faster than a standard A4000 / 030. Now look at the price **£939.99** (save £100 with A500 trade in) Credit terms available.

PHONE 0543 419999 FOR DETAILS



INDI LAUNCH NEW MULTI MEDIA CLUB

Indi have just launched **"The Indi Multi media Club"**. Members will be offered a complete range of Amiga Software covering Professional, Games, Utilities, CDTV, and CD Audio and video and selected PD.

Membership costs £10 per annum with a free offer on joining. Members will then receive a monthly catalogue giving incredible discounts on all products listed.

RING 0543 419999 FOR MORE DETAILS

indi DIRECT MAIL

DMA ENSURES HIGHEST PRACTICE

As with most industries, the UK's personal computer industry has its share of cowboys operating in the mail order sector and at the receiving end a line up of despairing consumers who have suffered at their hands.

A personal computer is a sophisticated and expensive item and provided the purchaser is dealing with a reputable and accredited supplier, buying a computer by mail order can be a perfectly safe and cost effective exercise. The Direct Marketing Association (DMA) was set up in April 92 to set and maintain high standards for the sake of the industry and society at large, and to ensure that we can continue to regulate our own activities on the basis of proper professional responsibility.

Membership of the DMA is not conferred lightly - it is a privilege which entails responsibilities, to the consumer as well as to the industry. The foundation for this must be good practice. DMA members are required to abide by the highest standards as laid down in the DMA's code, enforced on members by The Authority of the DMA a separate body with an independent Chairman, and which is an assurance of vigorous self - regulation and professional responsibility.

DMA members also agree, as a condition of membership, to abide by The British Code of Advertising Practice and The British Code of Sales Promotion Practice: to apply the Mailing Preference Service file when appropriate: and to subscribe to the Advertising Standards Board of Finance (ASBOF) and to the Mailing Standards Levy as applicable.

The DMA symbol can only be used by members. Printed on stationary, advertising and other promotional material it demonstrates that these companies conform to the Association's high standards and are subject to the DMA's Code of Practice, thus enhancing the companies credibility with customers, suppliers and of greatest importance, the consumer.

Since the symbol was introduced last June, it has become synonymous with quality , professionalism and and responsibility. While it cannot be shown in any way which will become a sign of best industry practice and of strict adherence to DMA codes of conduct. The symbol represents authority for members and reassurance for consumers. It has been a high valued mark of confidence signifying to the consumer the truly professional edge of the industry.

Alison Slan

Alison Slan
(Director of Public Relations,DMA)

indi DIRECT MAIL

DIRECT MARKETING ASSOCIATION

DEFERRED CREDIT ON ALL ORDERS OVER £200.
*PAY 10% NOW AND NOTHING MORE FOR 3 MONTHS

CUSTOMER CHARTER

INDI Direct Mail is original and very exciting. Before you buy mail order you must first be confident that you will receive the product you've ordered and that the supplier will be still be there in the future, should you need them.

A mail order purchase from INDI is a safe and secure decision, and here's why.

INDI is a wholly owned subsidiary of a public company now in it's tenth year of trading and specialising in the supply of computer products.

With a turnover approaching £30 million per annum, we have the resources and the purchasing power to offer you the best deals, deliver them next day nationwide and always be around when you need us.

SALES AND SUPPORT

The INDI sales team have been trained to take your order with the utmost care and efficiency. All stock offered for sake is held in stock, centrally at our group ware house complex and is available for next day delivery, direct to your home or business. If at any time we are out of stock your money will not be banked until the product is available (a point worth checking should you be tempted to purchase elsewhere)

General information regarding product is available from our sales team, however technical support is always on hand should you need assistance.

All prices quoted are inclusive of VAT.

INDI TELESALES
TEL 0543 419999 FAX 0543 418079

CREDIT FACILITIES

INDI are now able to offer competitive credit facilities on all orders over £200. All credit facilities are subject to status and applicants must be over the age of 18.

If you would like a quote simply call our our sales line where acceptance can normally be notified within the hour. We are also able to offer Credit Insurance to cover repayments in the event of sickness or unemployment.

AMOUNT* OF CREDIT	12 MONTHS		24 MONTHS		36 MONTHS	
	MONTHLY PYMNTS	TOTAL PAYABLE	MONTHLY PYMNTS	TOTAL PAYABLE	MONTHLY PAYABLE	TOTAL PYMNTS
200	£22.00	£264.00	£12.00	£298.32	£9.31	£335.63
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APR 29.9% WRITTEN QUOTATIONS AVAILABLE ON REQUEST
*After deposit paid

AFTER SALES AND SPECIALIST SERVICE

All products are guaranteed for 12 months. Some products carry a 12 months at home service and repair guarantee (where indicated). In the unlikely event that any product purchased from INDI arrives at your home faulty, we will collect from your home and replace the product completely free of charge.

As part of our policy of continual product development and refinement, we reserve the right to change specifications of products advertised. Please confirm current specifications at the time of ordering.

Prices are valid for month of publication only.

AMIGA A1200

ALL NEW 32 - BIT AMIGA



INDI ADDED VALUE FREE

COMIC RELIEF PACK

The event may be over but the fund raising still goes on. If you're looking for the latest Amiga technology then this is the starter pack for you. Based around the outstanding A1200, this pack also gives you sleepwalker, a most addictive platform game from ocean software. You'll be pleased to know that every one of these packs purchased raises another £10 for Comic Relief.

A1200 STANDARD FEATURES.

* 68020 Processor * PCMCIA Slot. * 2MB Chip RAM. * 3.5" Internal Drive * AA Chipset. * Built in TV modulator. * Alpha numeric keypad. *12 Months at home maintenance.

INDI PRICE

£379.99 or from **£14.47*** per month

*(Credit price based on 36 monthly payments APR 29.8%. Total repayment £520.92 and 90 day deferred payments.

A1200 60 MEG HD INDI PRICE £569.99
A1200 80 MEG HD INDI PRICE £599.99
A1200 120 MEG HD INDI PRICE £679.99

OFFICIAL A1200 HD SYSTEMS

The Amiga 1200 supplied by Indi Direct Mail now includes the official (legal) Commodore installation disk and hard drive utility manual. Indi are proud to be an official supplier of Amiga 1200 Hard Drive systems, that include the official software, documentation and on - site warranty.

A500 TRADE IN!!

£100 for your old Amiga 500 against any A1200 from Indi Direct. Must be in full working order, complete with mouse, manuals and P.S.U

INDI A1200 ACCESSORY PACKS

Pack Contains:

* International Games Challenge. * The Cool Croc.
* Paradroid 90. * Zapsac and Zappo T - shirt.

INDI PRICE £19.99

60 / 80 Hard Disk upgrades available on any A1200. Upgrade includes full Wang warranty on A1200 and Hard Disks. Phone for a quote.

AMIGA A4000



It's here - The new Amiga 4000/030

The NEW Amiga 4000/030 features a EC68030 processor running at an incredible 25Mhz, and upgradable at a later date to a faster processor. The 4000/030 has a powerful 4 Mb of 32 - bit RAM (2Mb chip & 2 Mb fast) expandable to 18 Mb using industry standard 32 - bit Simms module. In line with the Amiga Flagship 4000/040 the 4000/030 features the new AGA graphics chipset, giving you a massive pallet of 16.8 million colours. A range of hard drive options are available from 80 - 240 Mb and includes a SCSI option.

4000/030 80 Mb HD INDI PRICE £939.99

Other Drive Options

4000/030 120 Mb HD INDI PRICE £1039.99

4000/030 240 Mb HD (exclusive to INDI)
Phone for price.

4000/030 120 Mb SCSI HD (exclusive to INDI)
Phone for price

A full range of approved upgrades are available for the 4000/030, including additional memory modules, hard drives, PC bridge boards, FPU's (68881 &68882)and the 24 - bit Opal Vision graphics and video system

NEW MONITOR RANGE

THE NEW DUAL SYNC1942 Monitors have been specially designed for the New Amiga 1200 and 4000 computers. Both monitors feature built - in stereo speakers.

INDI PRICE

1940 Monitor £279.99

14 inch screen size - 0.39 mm dot matrix

INDI PRICE

1942 Monitor £379.99

14 inch screen size - 0.28 mm dot matrix



Parnet Adaptor for CDTV

Connect a CDTV player to any Amiga, and access the w
of CD - ROM software.The Parnet interface and soft
will allow the Amiga CDTV to be used as a CD - R
drive withe any Amiga and will give any Amiga owner a
to the vast range of CDTV software currently available.
The CDTV player offers excellent value for money
compared with a standard CD - ROM drive and inte
Most CD - ROM drives will set you back over £400
CDTV will cost you less than £300 and will play audio
in addition to CD - ROM / CDTV disks your Amiga,
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player.

INDI PRICE £39.9

A4000/030 PLUS CDTV + 1960 MONITO
INDI PRICE £1599.99
CDTV + PARNET.
INDI PRICE £329.99

AMIGA A600 PRICE CRASH



THE WILD THE WEIRD AND THE WICKED

A600 is an ideal starter pack containing a considered mix of software, making the most of the Amigas capabilities.

PACK CONTAINS:

* **A600 Single Drive**
* **Built in TV Modulator**
* **1 Mb Memory**
* **Pushover: Grandprix**
* **Silly Putty: Deluxe Paint III**
* **Mouse and Manuals**

NEW LOW LOW PRICES

~~£289.99~~ **£215.99**

A600 - SD A single drive Amiga for those of you requiring a basic A600 at a very com petitive price.

PACK INCLUDES: A600 single drive, built in TV modulator, 1 Mb memory. 12 Months home service

INDI VALUE ADDED FREE * Kick Off 2 * Pipemania * Space Ace * Populous * Microswitched Joystick

INDI PRICE ~~£239.99~~ **£189.99**

A600 EPIC PACK (40 Mb HD) PACK INCLUDES:

A600 Hard Disks (40Mb) * **1 Mb Memory** * **Epic** * **Rome** * Myth * Trivial Pursuit * Amiga Text * Deluxe Paint III * 12 Months at home service.

PLUS INDI ACCESSORIES PACK AS LISTED COMES WITH AN EXTRA 512K RAM EXPANSION FREE.

INDI PRICE ~~£395.99~~ **£379.99**

INDI A600 ACCESSORY PACK

* Microswitched Joystick * Lockable Disk Box * Disk Wallet * 10 Blank Disks * Kick Off 2 * Pipemania * Space Ace * Populous * Zapsac Carry Case * Zappo T - Shirt.

INDI PRICE £26.99

TERMS AVAILABLE OVER 6, 12, 24, & 36 MONTHS SUBJECT TO STATUS. WHY NOT RING FOR A QUOTE. SAMEDAY RESPONSE. (SEE EXAMPLE)

Panasonic Quiet Colour Printing

DIRECT MARKETING ASSOCIATION

We researched the colour printer market at great depth to find a colour printer good enough to cope with Amiga's powerful output, yet at an affordable price.
We found the perfect printer in the KX - P2180 and KX - P2123 quiet printers.
We then considered that if you were going to buy a Panasonic printer you would probably need a quality word processing package to use with it. We found that too, with 'Wordworth' yet at a retail price of £129.99 we thought that might be a little too expensive on top of your printer purchase! So together with Panasonic we decided to give a copy of 'Wordworth' free with every Panasonic printer. How's that for added value?

Panasonic KX - P2180



***WORDWORTH COMPLETELY FREE! WITH PANASONIC QUIET PRINTERS.** The writers choice. The ultimate word processor for AMIGA computers. Wordworth is undoubtedly the ultimate word / document processor for the full range of AMIGA computers. The graphical nature of WORDWORTH makes producing documents faster and easier, with the enhanced printing fonts (including full Panasonic KX - P2180 and KX - P2123 colour printing support), Collins spell checker and thesaurus, no other word processor comes close. "Without doubt this is one of the best document processors for the AMIGA, Today" (Amiga Format)

NORMAL RRP £129.99 inc. VAT

The new Panasonic KX - P2180 9 -pin quiet printer. Produces crisp clear text in mono or in 7 glorious colours with new quiet technology. THe new KX - P2180 is typically 15dBa quieter in operation, than the competition.

- **Fast Printing** Speeds 192 CPS NLQ
- **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta,black)
- **Quiet printing** Super quiet 45 - 48 dBa sound level (most matrix printers are typically in excess of 60 dBa)
- **6 Resident Fonts** Over 6,100 type styles using Courier Prestige, Bold PS, Roman, Script and Sans Serif Fonts.
- **3 Paper Paths** Paper handling from bottom, top and rear for total flexibility
- **1 Year Warranty** for total peace of mind

INDI PRICE £189.99

Panasonic KX - P2123



The new high performance Panasonic KX - P2123 24 pin. Quiet colour printer offers leading edge quiet printing technology at an affordable price

INDI PRICE £239.99

- **Fast Printing Speeds** 192 CPS draft, 64 CPS LQ and 32 SLQ.
- **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta, black)
- **Quiet Printing** Super quiet 43.5 - 46 dBa sound level (most matrix printers are typically in excess of 60 dBa)
- **7 Resident Fonts** Over152,000 type styles using Super LQ, Courier Prestige, Bold PS, Roman, Script, and Sans Serif Fonts.
- **24PIN Diamond** Printhead High performance and high quality output
- **1 Year Warranty** for total peace of mind.

Panasonic LASER PRINTER

KX - P4410 LASER PRINTER





WORDWORTH COMPLETELY FREE WITH PANASONIC LASER PRINTERS. The writers choice. The ultimate word processor for AMIGA computers NORMAL RRP £129.99 inc VAT

KX - P4430 LASER PRINTER



Once again INDI have joined together with Panasonic to offer all Amiga owners the most outstanding Laser Printer offer ever. We are now able to offer high quality, professional laser printing at affordable prices. We are also giving away a copy of Wordworth with every Panasonic Laser Printer purchased (RRP £129.99). Whether you are looking for a laser printer to handle word processing, DTP, presentation or complex graphic applications - the Panasonic range offers you the power to meet your requirements.

KXP - 4410

- 5 pages per minute
- 28 resident fonts
- Optional 2nd input bin(total printer capacity 2 x 200 sheets)
- Low running costs
- Parallel interface
- Optional memory expansion to 4.5 Mb (0.5 as standard)
- HP laserjet II Emulation

INDI PRICE £499.99 inc. VAT

Imminent price increase. This price while stocks last.

WORDWORTH COMPLETELY FREE WITH LASER PRINTERS

Panasonic 2 YEAR ON-SITE WARRANTY

KXP - 4430

- Satinprint (optimum resolution technology)*
- 5 Pages per minute
- HP Laserjet III Emulation, PCL 5
- 8 Scalable fonts & 28 bitmap functions
- Optional 2nd input bin (total printer capacity 2 x 200 sheets
- Optional memory expansion to 5.0 Mb (1 Mb as standard)

INDI PRICE £699.99 inc. VAT

Imminent price increase. This price while stocks last.

*(Satinprinters use optimum resolution technology to produce truly outstanding print quality. This software technique smooths away traditional jagged edges on curved characters and lines by varying the printed dot size

WORDWORTH COMPLETELY FREE WITH LASER PRINTERS

Panasonic PRINTER ACCESSORIES



1) **PANASONIC AUTOMATIC SHEET FEEDER** Automatic sheet feeder for KXP 2180/ KXP 2123 holds 80 A4 sheets. **INDI PRICE £89.99**

2) **PRINT DUST COVER** Specially tailored quality dust cover for Panasonic KXP 2180/ KXP 2123 printer. **INDI PRICE £8.99**

3) **PRINTER STAND** 2 piece printer stand. **INDI PRICE £9.99**

4) **PAPER PACK** 500 sheets quality A4 paper. **INDI PRICE £9.99**

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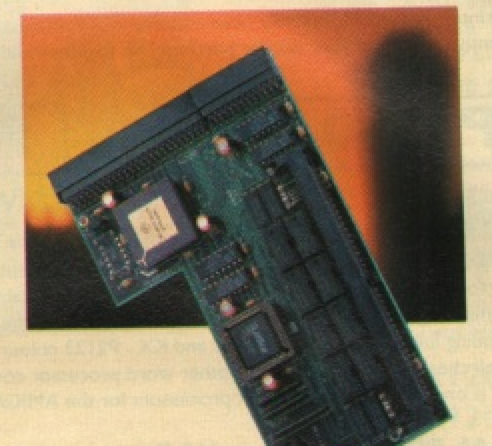
WANT THE BEST IN PROFESSIONAL AMIGA. WHY NOT TAKE ADVANTAGE OF THE CREDIT DEALS AVAILABLE (SUBJECT TO STATUS). CREDIT AVAILABLE ON 6,12, 18, 24, 36 MONTHS. WHY NOT RING NOW FOR A QUOTE. SAME DAY RESPONSE.

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MEMORY UPGRADES AND ACCESSORIES

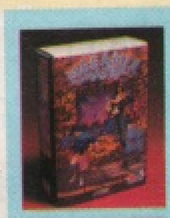
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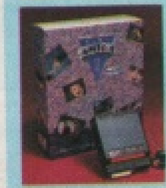
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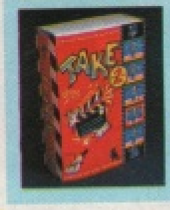
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Entry level Genlock for all Amigas. Record stunning Amiga Graphics [...] standard video or overlay text and graphics onto a video signal.
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The NEW OPAL VISION system (Rev.2)

The amazing Opalvision 24 - bit graphics board and software suite has been updated and is now even better value for money.

The software suite now includes:

Opal Paint V2.0 - Now includes full magic wand implementation and Alpha Channel that allows photo compositing with selectable levels on a pixel by pixel basis.The new Chrominance effect allows absolute, real time control of image contrast, brilliance and re - mapping of colours.

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IMAGINE V2.0 for only **£59.99** when purchased with OPALVISION
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"Quite simply, it's a spectacular product - Amiga Computing
"Undoubtedly the finest, most professional paint program to arrive on the Amiga" - Amiga Format
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INDI PRICE £599.99

OpalVision NEWS FLASH

At Last - OpalVision Upgrade Modules!
OpalVision Video Processor - Plugs into the OpalVision mainboar[d] adds a waelth of additional features * 24 Bit real - time frame gra[b] from composite or S - Video. * Professional quality genlocking *VLSI microcode processor "Roaster Cip" for Digital Video Effec[ts] *Luninance & Chroma Keying * 256 - level "Alpha Channel" (tran[...] cy) key.Management Software
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AMIGA CDTV THE MULTIMEDIA COMPUTER TOTAL HOME ENTERTAINMENT SYSTEM



MONITOR NOT INCLUDED



The problem with any new product is that it always takes time for everyone to realise its full potential.
CDTV is no exception and in our opinion everything we have read does a pretty poor job of explaining just what CDTV can do and why it is so exciting.

THE INDI GUIDE TO CDTV

IT'S A CDTV PLAYER - Yes, it will play all your Primal Scream, Paverotti, Pink Floyd and any other CD you care to mention in superb high quality stereo, with infra red remote control.

IT' AN AMIGA - Plug in the keyboard, switch on the external disk drive and the colossal range of inexpensive Amiga Software can be used on CDTV.

IT'S A MULTIMEDIA SYSTEM - Just imagine, stereo sound, images and text all on screen. It asks a question, you respond, it responds - truly interactive! Each CD disk holds hundreds of megabytes of data with instant optical access. The whole of Hutchinsons encyclopaedia fits on to one disk. This interactive system is a unique aid for Education, Business or Leisure. The future is here!

PACK CONTENTS AS STANDARD * Amiga CDTV Player * CDTV Keyboard * CDTV 1411 3.5" Disk Drive * CDTV Infra Red Remote Controller * CDTV Wired Mouse * CDTV Welcome Disk * Manuals * Fred Fish CDTV Disk

INDI VALUE ADDED FREE * Lemmings CDTV (£34.99)
* Blues Brothers (£12.99)
* Pipemania, Populous, Kickoff 2, Space Ace.

INDI PRICE

PACK AS SHOWN **£329.99**

PRICE CRASH ~~£399.99~~

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CDTV CONNECTS DIRECTLY TO YOUR TV SET

AMIGA CDTV ACCESSORIES



THE BRICK - ETTE
Just plug in the brick - ette and use any wired Amiga compatible joystick, mouse of trackball device on the Commodore CDTCV. The built - in 8 - bit Micro Processor gives the Brick - ette big smarts in a tiny package and makes it easy to use just plug into the remote port and it is ready to go with real time mouse or joystick movement on your CDTV. No loading of driver programs or software. No switches for mouse or joystick. Special settings (with mouse) allow you to blast away with with three rapid fire modes & dual fire buttons. Comes complete with Micro switched joystick.
INDI EXCLUSIVE £49.99
two joysticks **£59.99**



BLACK 1048S MONITOR
At last the CDTV Monitor you have been waiting for. The original and best selling colour/ stereo
monitor from Commodore is now available in black to complement your CDTV
INDI PRICE £189.99
(or £179.99 when purchased with CDTV Multi Media pack



If you are thinking of buying CDTV or already own one you'll be pleased to know that INDI stock all CDTV accessories and software that are available from manufactures. We believe in CDTV and we therefore continue to support this exciting product. You will always have a source of product for your CDTV from INDI.

L to R

CDTV Encore SCSI Controller + Internal Mount	£109.99
CDTV Internal Genlock	£ 149.99
Black 1084S Colour Stereo Monitor	£189.99
(When purchased with CDTV Multi - Media Pack)	£179.99
CDTV Remote Mouse	£49.99
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AMIGA CDTV EXTERNAL HARD DISK DRIVE

You've got the CDTV, you've got the keyboard and the floppy disk drive - for a total computer solution all that's needed is an ultra fast hard disk drive.
The CDTV - HD unit boasts a massive 85 Mb of hard disk storage with lightning fast access times through its SCSI interface. The unit comes complete with Workbench 1.3 and all necessary cables.



INDI PRICE
£299.99

12 MONTHS INTEREST FREE CREDIT ON THIS PRODUCT. PHONE FOR DETAILS (SUBJECT TO STATUS)

AMIGA CDTV SOFTWARE

SEE THE JAKKI BRAMBLES PAGE FOR DETAILS OF THE INDI SOFTWARE CLUB

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Although some misinformed pundits sneer at the Amiga as a 'serious' machine, it can do almost everything that a PC can and much, much more. Even Amigas costing as little as £199 are capable of running complex software ranging from word processors to image processors and sound sample editors. Having said that, sooner or later most serious users will want to increase the power of their machine in some way.

Upgrading your Amiga needn't cost an arm and a leg. There are some add-ons which are quite inexpensive, yet can make a significant difference to your computing life. Here we take a look at some of the most interesting ones.

RAM ROUND-UP

Memory is the Amiga's temporary storage space, where it holds the information relevant to a program that is being run. Some programs such as games don't really need a great deal of memory because they've been programmed to work in 1Mb or less. Nevertheless, they may run more efficiently if you increase the amount of RAM. Utility programs, on the other hand, may need to store lots of temporary data in memory and can sometimes need as much memory as possible.

Although 1Mb has more or less become the minimum standard nowadays, more and more programs require 3, 4 and even more Mbs to operate in efficiently.

Due to their architecture, each different Amiga model (A500, 500+, 600, 1200, 2000 and 4000) requires a different type of RAM. As you move towards the higher number Amigas (A1200 and upwards), it's rare to find RAM cards that come on their own. Most RAM is added on a board that does something else – an accelerator or PC emulator for example.

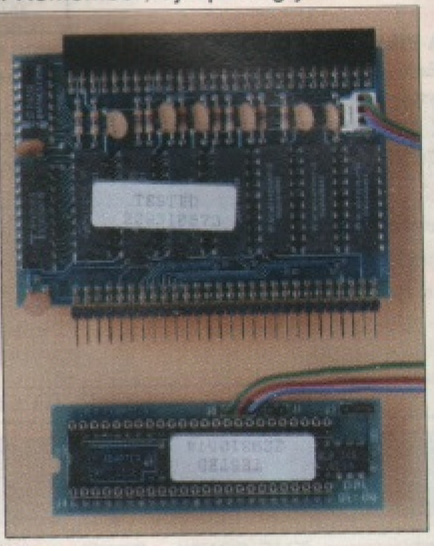
A500 UPGRADES

A500 1MB EXPANSION WITH THROUGH-PORT

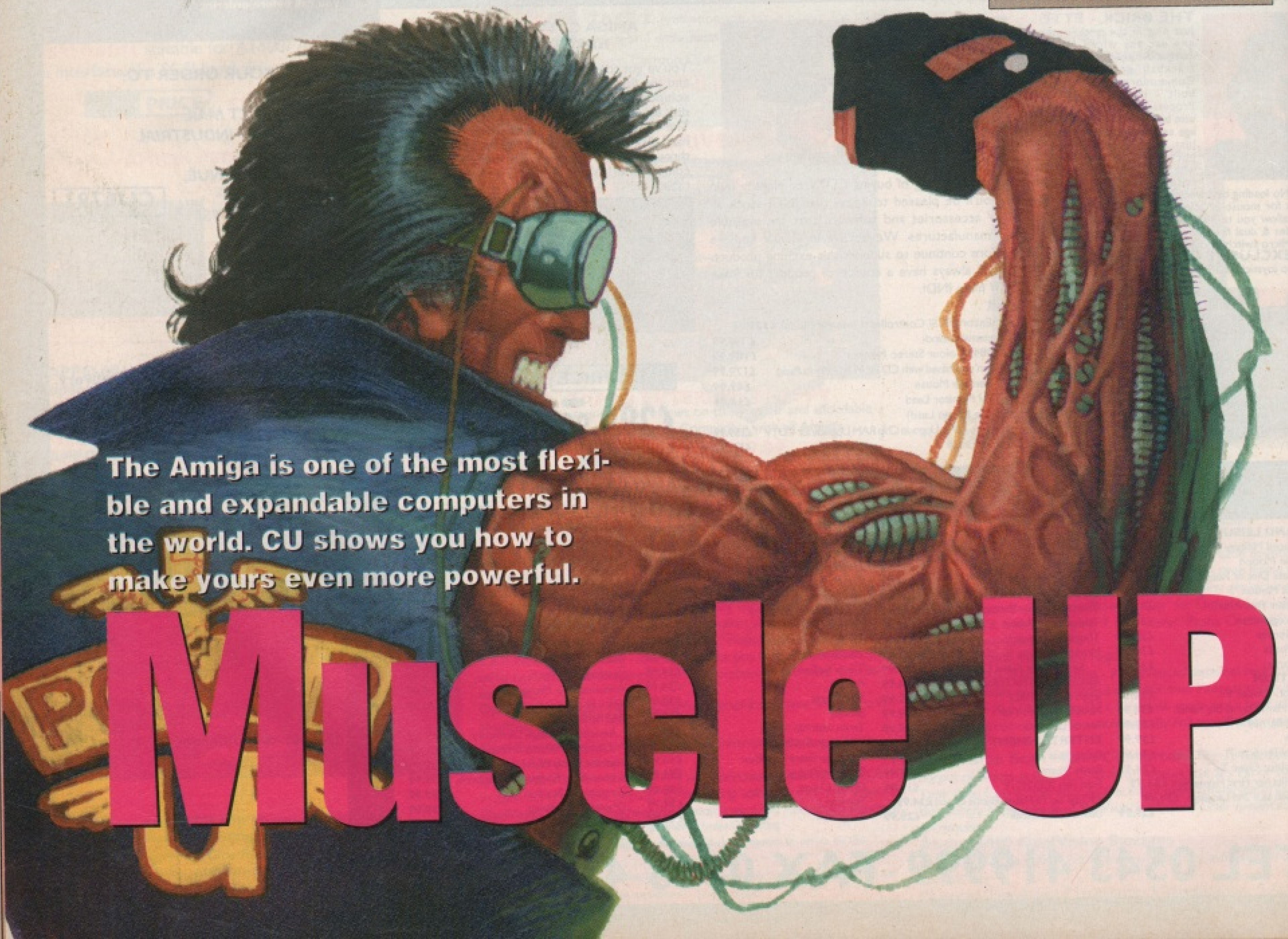
£49.00 • POWER COMPUTING • 0234 843388

This trap door memory expansion uses low power 256x4 DRAM chips to provide 1Mb of extra memory for an A500. However, where it differs from most expansions is in its through-port. This means that if you wish to further upgrade your computer, provided you use half size RAM (which most of them are nowadays), you can simply plug a second card straight into the end of this one.

To use this RAM card you'll need to open up your Amiga and plug a mini-circuit board into the slot where the Gary chip sits. The Gary chip is then inserted into the mini-circuit board. Remember, by opening your Amiga you invalidate your warranty, although I don't suppose there are many 1.2/3 Amigas that still have a warranty by now. Nevertheless, if the thought of messing about with delicate chips makes you nervous, perhaps you should look at other alternatives.



Instructions are also provided to enable you to perform an advanced installation on Amigas that have Kickstart 1.3 or higher. This installation upgrades your memory to give you a full 1Mb of Chip RAM. Unfortunately it's not suitable for the A500+ machine.



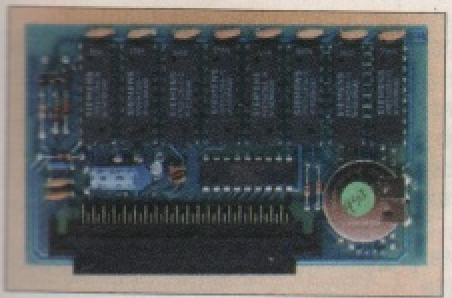
The Amiga is one of the most flexible and expandable computers in the world. CU shows you how to make yours even more powerful.

Muscle UP

PC501 HALF MEG CARD

£24.95-£29.95 • POWER COMPUTING • 0234 843388

The PC501 is about as ordinary as a trap-door RAM expansion can be. Roughly the size of a narrow credit card, it uses 256x4 DRAMs and is ideal for plugging into the 1Mb with through-port expansion reviewed on the previous page. If you're going to use it on its own, I think it's a tad over-priced at £29.95 especially as it doesn't even include an on/off switch. Mind you, at least it includes a battery-backed clock.

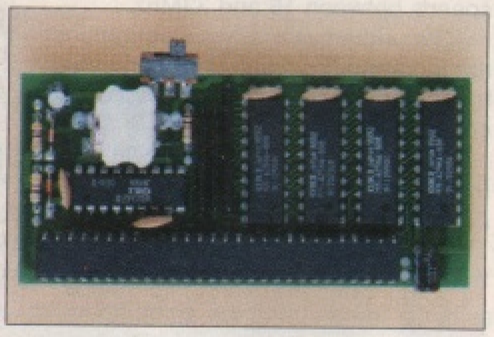


If you don't think that a clock is important you can buy a version without for £24.95. Not suitable for A500+.

ZYDEC HALF MB MEMORY UPGRADE

EVESHAM MICROS • £19.99 • 0386 765500

Although the board layout is slightly different (and less neat) than Power's PC501, the Zydec RAM very similar in every other way. It too includes a battery backed clock and is little smaller in size than the PC501.

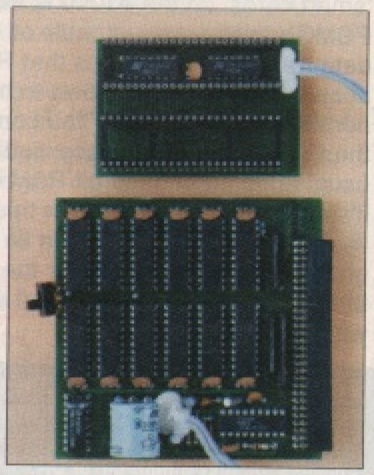


It does, however, come in a pretty box and it includes an on/off switch!
Not suitable for A500+.

ZYDEC AMIGA 500 1.5MB MEMORY UPGRADE

£99.99 • ANY RETAILER

Another board to take your A500 beyond 1Mb, this time manufactured by Zydec, this is a real monster of a board and is unlikely to win any design awards.



It plugs into the trap-door and again needs you to plug an extra board (supplied) into the Gary chip slot. The Gary chip is then plugged into the mini-circuit board that's attached to the main RAM by an eight inch wire.

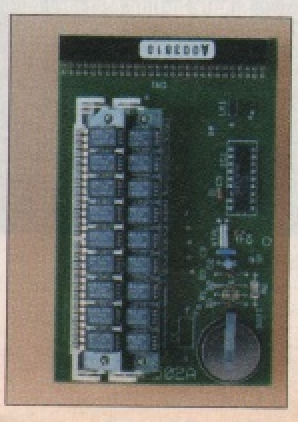
Fitting this board will invalidate your warranty, but the process is easy enough if you take your time.

Unlike the Power board, this one also includes a battery backed clock and an on/off switch. The Gary board is also fitted with extension legs to lift it clear of the main motherboard.

AMITEK 512K RAM BOARD WITH CLOCK

£23.95 • SILICA SYSTEMS • 081 309 1111

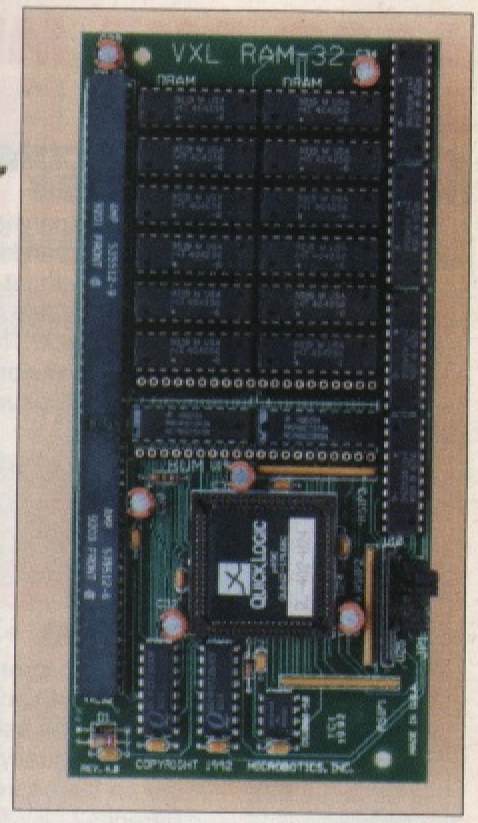
This last A500 expansion looks as if it hails from the days when people were still paying £150 for Commodore's A501 expansion. It uses 256x1 DRAMs and includes a clock. It appears extremely well made, even if the board design is somewhat dated now.



It doesn't include an off/off switch, but it does have a clock and is by far the cheapest expansion reviewed.

MICROBOTICS VXL RAM-32

£170 FOR 2 MB • MICROPACE • 0753 551888



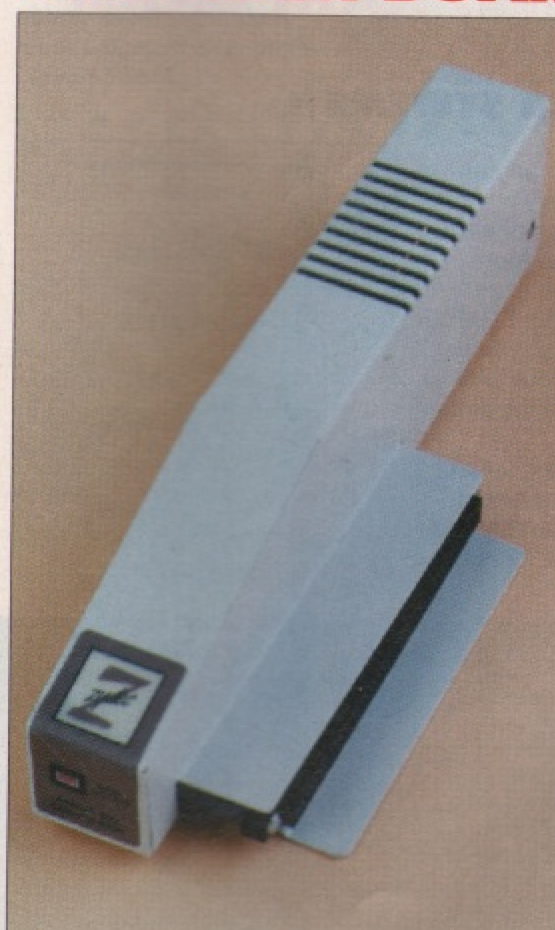
Unlike the other A500 expansions reviewed here, the VXL RAM-32 can't be used on its own – it has to be plugged into the VXL-30 Accelerator.

However, it has a great advantage over other RAM systems reviewed because it is 32-bits as opposed to 16-bits wide. This means that all operations performed via this RAM will also be accordingly faster.

The VXL RAM-32 is supplied with between 2 and 8Mb of RAM, and this is configured using a combination of jumper blocks and software settings.

The VXL RAM-32 can be plugged into both an A500 and A500+ (and an A2000). Installation will invalidate your guarantee, but boy it's worth it! Well worth the initial cost of purchase.

ZYDEC A500 EXTERNAL 8MB RAM BOARD



£169.99 WITH 2 MB • ANY RETAILER

For those of you who want to expand beyond the usual couple of megs, or who don't want to invalidate your warranty, this unit really is very nice indeed. Similar in appearance to the SupraRAM, the Zydec board plugs into the expansion port at the side of the Amiga. It even has a through port so that you can still add further peripherals (such as hard drives, scanners, Action Replay cartridges, etc.) to your computer.

It uses 256x4 16-bit ZIP chips and these can be added in steps of 2, 4 or 8Mb, and as usual the system is configured using jumper blocks.

The unit really is incredibly easy to use, just plug in, switch on and go. It has a light on the front to let you know when the RAM is being accessed, and a socket at the back so that if you have a lot of power consuming extras plugged into your Amiga, you can add a power supply to your RAM board.

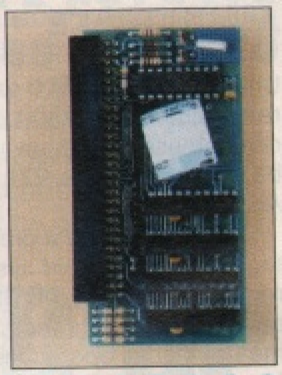
The whole thing is housed in a very sturdy metal case which is nicely colour co-ordinated to match the Amiga's plastic casing. The only tiny gripe that I have about this otherwise excellent unit is that when plugged in, it seemed to sit at rather an odd angle to the computer. Perhaps it's just that I got a duff one?
Suitable for any A500.

»

» A600 UPGRADES

A600 1MB MEMORY EXPANSION

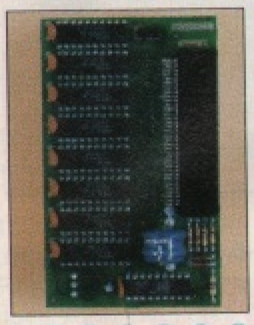
£39.95 • POWER COMPUTING • 0234 843388



A nice straightforward trap-door expansion for the A600 – simply plug in and go. It expands the A600's chip RAM from 1 to 2 Mb without affecting your warranty. Uses 256x4 DRAMs and comes with an optional battery backed clock. There's no on/off switch, but as it's a chip expansion it isn't needed. The board is up to Power's usual high standards of workmanship.

ZYDEC A600 1MB MEMORY UPGRADE

£67.99 • ANY RETAILER



Another trap door expansion that is almost identical to Power's offering. Why then is there a £28 price difference you ask? There isn't an easy answer to that – it is usually down to the actual RAM chips used on the board, but would the user notice any difference?

Having said that, to be fair, Zydec products can be found at greatly reduced prices from store to store so it's well worth shopping around.

AMITEK 2MB RAM CARD FOR THE 600

£119.95 • SILICA SYSTEMS • 081 309 1111



For sheer ease of use, the Smart card has to be tops. However, it only increases your Fast RAM, so it doesn't necessarily enable you to load more graphics or sound samples.

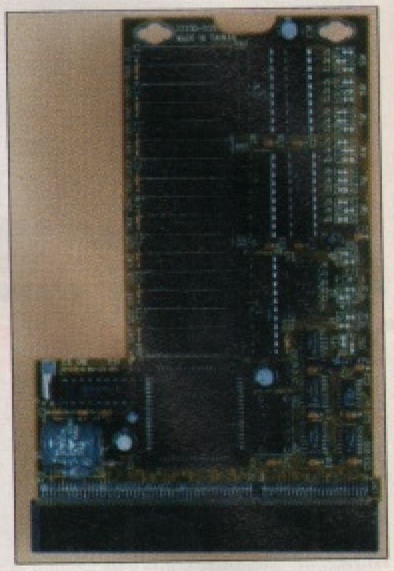
This 2Mb card plugs into the PCMCIA slot at the side of your A600 so you don't even need to open the trap-door to fit it. Note that this is different from the slot on the CDTV.

I must say, it's the chunkiest smart card I've ever seen, and it's not even particularly cheap. I guess you're paying for the convenience and ease of use.

A1200 UPGRADES

ALFARAM1200

£115.00-£439 • GOLDEN IMAGE • 081 518 7373



Although RAM upgrades for the A1200 are ten a penny now, this one from Golden Image is unusual for a number of reasons. It comes populated with 1Mb of RAM as standard, and can be upgraded to 5 or 9 Mb, to give your A1200 a maximum capacity of 11 (!) Mb. However, rather than offering this upgrade in the form of SIMMs modules, Golden Image have opted for ZIP chips, which are cheaper to purchase. This results in a board which offers exceptional value for money in my opinion.

It comes with a battery-backed clock as standard, and has space for a maths co-processor and oscillator rated at speeds between 16 and 33Mhz.

The various memory configurations are indicated by simply moving jumper blocks around. A program called SetMM is also provided for testing and configuring the board.

As a matter of interest, special warnings are given about the dangers of using a fully populated 9Mb board with a PCMCIA card. Apparently your A1200 can be permanently damaged by doing so.

Prices start at £115 for a 1Mb board and go up to £439 for a 9 Mb board with clock, 33MHz 68882 maths co-pro and oscillator.

AMITEK 2MB RAM CARD FOR THE 1200

£119.95 • SILICA SYSTEMS • 081 309 1111



For the A600 this card was a dubious purchase, for the A1200 it's a definite no-no. The main disadvantage of using 'smart cards' on the A1200 is that the PCMCIA slot is only capable of 16-bit data transfer. This means that RAM access will be slowed down to half the normal speed whenever the contents of the PCMCIA card are accessed. The usual advantage of 16-bit RAM is that it's much cheaper, except in this case.

Apart from that, there are so many good combo expansions for the A1200, there's really no need to mess about with cards.

MEMORY

Memory on the Amiga is a tricky business, mostly because there are several flavours and even worse, different models all have different expansion paths – do you use the trapdoor, a PCMCIA card or an external card? First you need to consider the types of memory – Chip memory is used for graphics and sound data, and because it must be shared between the processor and the custom chips it is quite slow at times. The amount of Chip memory supported by the Amiga depends on the version of the custom chips inside – old Amigas can have 512K to 1Mb, newer AGA models support 2Mb and need it all. Fast memory is used purely by the processor and basically you can never have enough – 4Mb is a nice amount, but I find that 8Mb has brought true enlightenment (at least for the time being). Any Amiga fitted with a processor of type 68020 or above is capable of using 32-bit memory, which is organised to let the processor access it at top speed.

The 16-bit memory used in 68000 machines, and that available through PCMCIA cards, have access times twice as long. Extra-fast memory is usually available in the form of SIMM modules, although some A1200 expansion boards use ZIPs. One important point to realise when fitting extra memory to your system is that by buying a smaller capacity you may be limiting your future expansion. For example, the A4000/30 comes with two 1Mb SIMMs in its Fast memory expansion slots.

Adding two more 1Mb SIMMs will fill all four slots, and although 4Mb sounds a lot, if 4Mb SIMMs had been used from the outset the Amiga could have been expanded to a wholesome 16Mb. Therefore bear in mind that very few expansion systems can support mixed sizes of memory modules, be they SIMM, ZIP or DIP. The rule of thumb is always buy the biggest module you can afford, or might find you have to throw away perfectly good memory six months later. Memory is available in several formats, of which the PCMCIA card is probably the most foolproof – cards of up to 4Mbs are available but they are quite pricey at the moment.

Single In-line Memory Modules, more commonly known as SIMMs, are the next easiest to use. They were originally developed by Wang and consist of memory chips surface mounted to tiny circuit boards. SIMMs are available in 16 or 32-bit wide varieties depending on application, and clip into holders with negligible fuss. GVP hard drives are keen to accept 16-bit SIMMs, whilst A1200 accelerator expansion cards nearly all use 32-bit SIMMs.

Further down memory lane are the ZIPs, or Zig-zap in-line packages, which pack lots of memory into very small spaces. A3000 motherboards and several A2000 hard cards use these miniature wonders. Finally, we have the trusty Dual in-line DIPs such as those used to expand the Commodore A590 harddrive. Apparently a good source of these chips are defunct PC VGA cards, so ask your PC-owning chums if they have any spare. When buying memory for your computer, go through this checklist: 1. Is the memory the correct format (DIP, ZIP, SIMM, Trapdoor)? 2. Do I need 16 or 32-bit memory? 3. Will buying this size hamper future expansion? 4. Is the memory of the correct speed? (80ns usually suffices).

ACCELERATORS

Accelerators used to be boards which replaced the Central Processing Unit (CPU) with a faster one. The CPU is the 'brain' that processes all information and instructions in order for programs to run. The faster the CPU 'thinks' the faster it can process information.

Now a number of companies have come up with alternatives that don't require new processors (which can be quite expensive). We'll be looking at a number of ways of improving the speed performance of your Amiga.

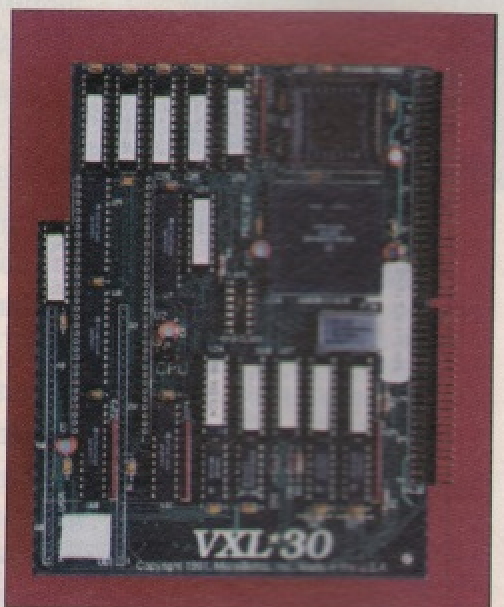
A500 ACCELERATORS

MICROBOTICS VXL-30

£400 • MICROPACE • 0753 551888

The VXL-30 comes in the form of a large board that fits inside the casing of your Amiga. It's a 25 MHz 68030 board with space on it for a maths co-processor.

To fit it the A500's 68000 chip has to be removed and the board fitted in its place. The 68000 is then fitted back into the board. When fitted to an A500+, the accelerator board needs to be raised up from the Amiga's motherboard, and extra legs can purchased for the job. It would have been nice to see them included as standard, but there you go.



The card has an edge connector to which can be added an additional RAM card which in turn may be populated by up to 8Mb of 32-bit RAM.

The installation is quite straightforward and the instructions adequate if somewhat vague at times. To complete the installation, you must use the supplied software to specify the RAM and maths unit that you are using (if any). After that, the board is invisible to the user.

One option that I particularly liked about this board is the fact that it allows you to specify whether it should be switched on or off by default. Therefore if you use a lot of software that might conflict with it (games for example), you don't have to keep turning the board off before you can use them. Perhaps a bit pricey considering the competition.

GVP A530 TURBO

£699 120 MB CAPACITY • SILICA SYSTEMS • 081 309 1111

This has been justifiably described time and again as the 'Ultimate A500 add-on', the A530 turbo combines a 40Mhz 68EC030 accelerator with a fast hard drive, SCSI interface, up to 8Mb of 32-bit RAM and space for a £100 PC emulator.

The drive simply plugs into the expansion port at the side of the Amiga and it's immediately ready to go. There's space on-board for an optional 68881 or 68882 maths co-processor and 32-bit RAM can be added in the form of 1, 2 or 4Mb SIMMS bringing the total up to 8Mb.



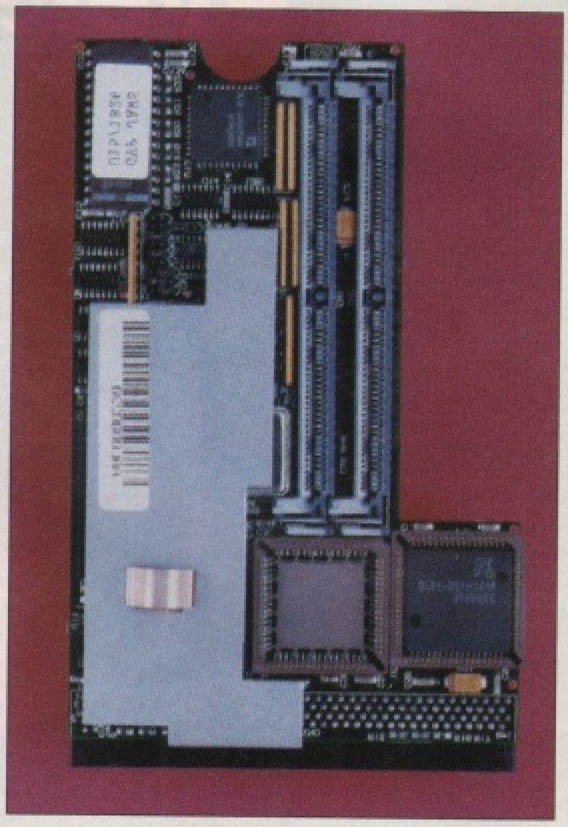
The accelerator itself isone of the best '030 upgrades available for the A500, although it is still a tad slower than the A3000, A4000/030 and some of he Zorro card accelerators.

The A530 is an excellent choice if you want an accelerator, RAM and a hard drive. Remember it has no through por though.

A1200 ACCELERATORS

GVP A1230 TURBO

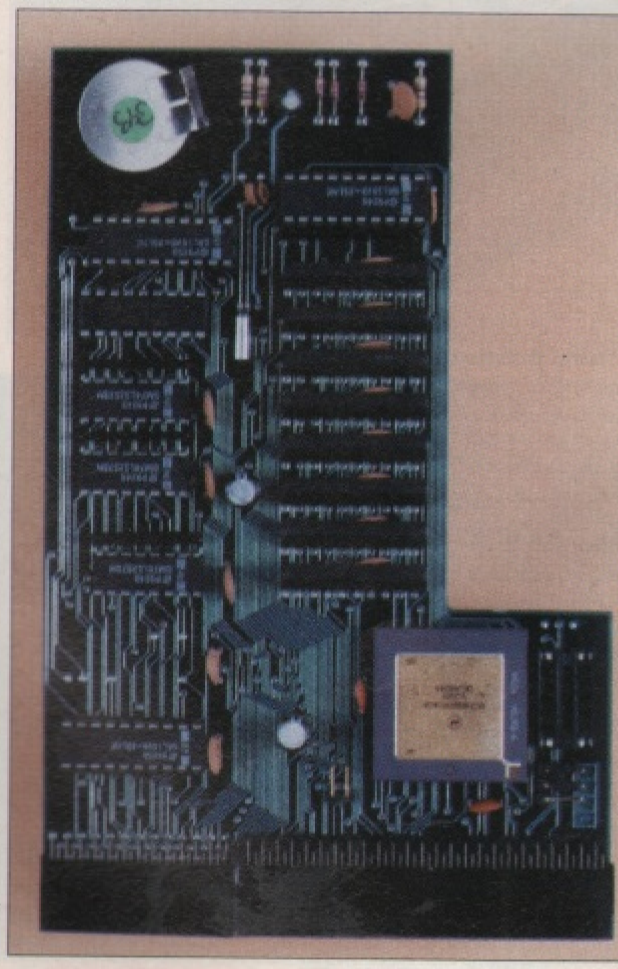
£299(0MB) • £499(4MB) • SILICA SYSTEMS • 081 309 1111



Taking the experience they gained in developing the A530 Turbo, GVP were quick to release an A1200 accelerator which is very similar to the accelerator part of the A530. It runs at 40MHz and has space for a maths co-pro.

One important difference is the fact that the A1230 lets you add not 8 but 32 Mb of 32-bit RAM if you so desire. The down side of this is that you have to really decide how much RAM you want before you buy, as there aren't very many slots. There is nothing quite as annoying as ending up with a 4Mb SIMM that you can't use. On the other hand only a very few people will be able to afford expansions much bigger, so they probably won't mind.

PC1204 FOUR MEG BOARD FOR THE A1200



£185.95-£333.95 • POWER COMPUTING • 0234 843388

Power's board is primarily a RAM upgrade offering 4Mb of 32-bit memory. However, it also comes with space for a maths co-processor which will speed up any floating point maths that your Amiga has to do. In all honesty, most people don't do enough of this kind of work to justify the maths chip, but if you have a penchant for ray tracing, fractal rendering or perhaps avery large spreadsheet, then this is a good option as it allows you to add a co-pro rated at up to 50MHz.

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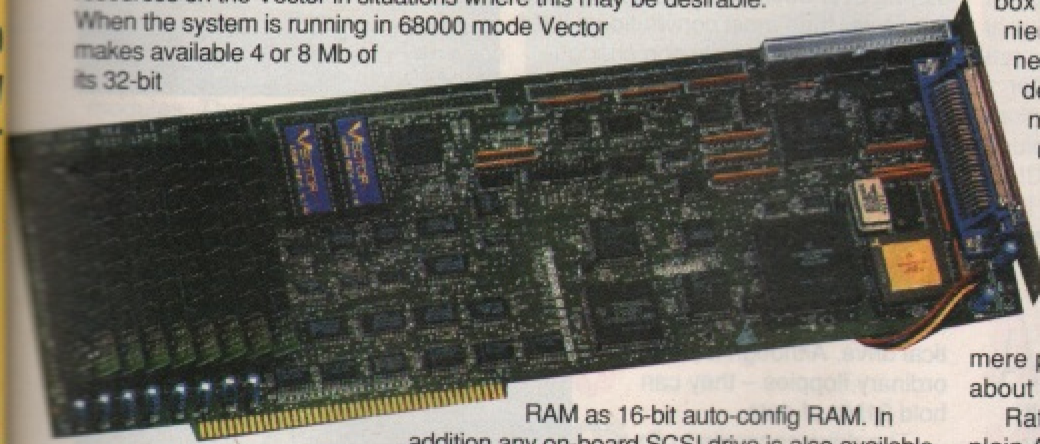
A1500/2000 ACCELERATORS

IVS VECTOR 2000

£449.95 • MICROPACE • 0753 551888

The card supplied for review was fitted with a Motorola 68EC030 processor and 68882 Floating Point Unit both clocked at 25Mhz, although 33Mhz and 40 Mhz options exist as well. Additionally the board can be bought with a full 68030 processor which includes the Memory Management Unit, very useful for development purposes. It is possible to use the newer 4Mb x 8 Simm chips to achieve a total on board memory capacity of 32Mb. The Vector is also equipped with internal and external SCSI connectors connected in parallel allowing the attachment of a hard disk internally and an additional device to the 50 pin Centronics external connector. Vector checks every two seconds for the presence of removable media (e.g. tape streamers) and so the 'disk change' is not necessary to detect these.

The very unique feature of the Vector is something IVS call PROPLEX – short for PROcessor multiPLEXing. This allows the native 68000 to access the resources on the Vector in situations where this may be desirable. When the system is running in 68000 mode Vector makes available 4 or 8 Mb of its 32-bit



RAM as 16-bit auto-config RAM. In addition any on-board SCSI drive is also available to the system in 68000 mode. With other accelerators, if the user chooses to use 68000 mode then access to the card is lost with both RAM and any attached device being invisible to the system. The choice of which mode to use is taken at boot time by holding down the right mouse button and selecting desired operational parameters from a boot screen. The 2000 will continue to operate in this mode even after soft reset. If you want to change to the other available mode then simply repeat the procedure – simple and very well implemented.

Performance in general was faultless with the accelerator providing on average a six to sevenfold increase in speed over a Fast RAM equipped 2000. Single-page documents in *Professional Page* printed in just over a minute where normally this would take between four and five.

As well as the significant increase in system speed hard drive performance has also improved by a factor of two, yielding just over 1Mb/sec. Writing this review using *Protext* showed just how fast the system has become, word counts and spell checking have become blindingly fast. In over a week of heavy usage the stability of the system is not in question.

One problem did, however, cause concern. All attempts to use a recoverable RAM drive in 68030 mode have met with failure although in 68000 they worked as normal. Commodore's Rad, ASDG's RRD and Richard Waspe's StatRam all failed to preserve their contents after a soft reset.

If the card was £150-200 cheaper then I for one would seriously consider adding one to my Amiga 1500.

ICD ADSPEED

£119 • POWER COMPUTING • 0234 843388

The idea of an accelerator appeals to almost everybody. At CU Towers we have an Amiga 4000/040 which takes regular beatings from an irate Tech Ed., shouting something about it being lazy and good for nothing. You can never have too much speed.

The AdSpeed is a high-compatibility plug-in module which should work on all 68000 based Amigas – the A500/ 500+/ A600/ A15000/ A2000 machines. Essentially the device plugs into the CPU socket on the Amiga motherboard, but getting at this can be tricky. On the keyboard-style machines this can be a chore – you have to take virtually the entire machine apart to get at the slot. This, not unnaturally, will completely invalidate any warranty you may have been fostering up to this point. Installation on the box machines is not much easier. The CPU socket is located inconveniently on the right-hand side of the motherboard and it may be necessary to remove the drive bays and the PSU in order to perform the delicate operation properly. Removing a massive 64-pin DIP package is not an easy task – well, not without breaking it anyway. A special chip-remover tool is recommended if you have a shaky hand.

The result of all this work is a hardly nimble 14Mhz processor, a clock speed of twice that of the original processor. It does also provide a 16k data cache, which will make some impact on operational speed. The results, however, speak for themselves. Doubling the speed of the processor won't double the speed of your machine. At best we have seen a 15-20 per cent increase, which is not bad for a mere processor replacement, but which you will easily fail to notice after about two days of use. It is cheap though.

Rating 686 dhrystones on SysInfo, apparently 17 per cent faster than a plain A500



ACCELERATORS

No computer is too fast and to be honest, you're a very lucky user if you think that yours is fast enough. No sooner have we all got used to our software going just quickly enough, when along comes a whole new batch requiring another teensy increase. It's a never-ending battle between hardware and software, with the specifications getting better and better.

Measuring the speed of an Amiga is a tricky business, as so much depends on the unique custom chips. For example, no matter what Amiga an arcade runs on, the video circuitry will be locked to a certain frequency and so there will be no noticeable increase in speed – *Project-X* runs the same on the A600 as it does on the A4000. (Note: some games, notably 3D simulations, will show an improvement). When it comes to sheer number-crunching the improvement is a more than a little obvious. You'll hear a lot about 'MIPS' or 'millions of instructions per second', and obviously the higher the MIPS rating the better. To put it all into perspective, an Amiga 600 rates less than one MIP, an A1200 about 1.5, an A4000/30 about 8 and an A4000/40 about 20 - a top-of-the-range Amiga 4000 can process data more than 20 times faster than an A600. The main reason for the speed difference is the choice of micro-processor unit (MPU) at the heart of the Amiga. All Amigas are based around the Motorola 68x00 family: the A600 uses the lowly 68000, A1200 the 68020 and A4000s the 68030s and 68040s. As the technology used in the manufacture of micro-processors improves, the chips have become faster and faster.

The forthcoming 68060 is rumoured to run at an awesome 100 MIPS – which only a few years ago would have classed it as a super computer. The speed at which a processor runs is also important, but it can be misleading. A 50Mhz 68030 (one which works internally at 50 million operations per second) is twice as fast as a 25Mhz 68030, but not as fast as a 25Mhz 68040...

A further way to boost performance is to fit a maths co-processor (also known as a Floating Point Unit or FPU). Normally an MPU such as a 68030 isn't able to directly manipulate floating point (non-integer) numbers, relying instead on external software. The FPU is capable of dealing with these numbers and because the code is built into the chip itself, it can do it very quickly.

Adding a Motorola 68881 or 68882 FPU to an MPU can speed up the maths operations in a ray-tracing program by at least 50 per cent. When the software has been specially written to make use of the FPU, the speed-up can be even greater. FPUs are clocked independently of the CPU, so it is quite possible to have a 50Mhz FPU running alongside a 25Mhz MPU. To improve choice, Motorola have made several 'budget' versions of their chips: the 68030EC is the same as the 68030 but lacking a Memory Management Unit (useful for virtual memory systems and program debugging), and the 68040EC also lacks the integral FPU which is present in full 68040s.

Whether or not you'd benefit from buying an accelerator depends on what you use your Amiga for. If you use a lot of graphics software, code compilers, sound sample manipulation programs or DTP packages the speed-up can be staggering. In situations where time is money, an accelerator will pay for itself.

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HARD DRIVES

Whilst extra memory increases the temporary storage capacity of your Amiga, a hard drive increases its long-term storage capacity. Hard disk drives have two distinct advantages over floppy drives: speed and capacity. A normal low-density Amiga floppy disk holds 880K, compared to current hard disks which can hold thousands of megabytes. Hard disks can also read and write data at up to 60 times the speed of a floppy. Unlike Amiga floppy drives, the speeds and capacities of hard drives are constantly rising.

A common misconception is that a 60Mb hard drive will give you 60Mb of RAM. The Mb rating of a hard drive refers to the storage capacity of the disk. Just to complicate things, most external hard drives can accommodate extra RAM. This is always Fast RAM, as Chip RAM cannot be accessed via the DMA port used by the drives. If you can't afford, or simply don't need any extra RAM when you buy the drive, you can add RAM at a later date. It's usually just a matter of removing the case and slotting in the chips, although you need to make sure you buy the right type of RAM.

We've stretched the heading of hard drives to include a number of other mass-storage devices.

A500 DRIVES

ALPHA POWER 65

£299 • GOLDEN IMAGE • 081 365 1102

Before you can have any fun with the Alpha Power, you need to install it. It comes pre-formatted, but completely empty. The installation software is far from easy to use. After you've run through the procedure, the drive still isn't usable. Vital commands are missing from the C directory among others, which makes it impossible for you to complete the installation yourself if you boot from the hard disk. You end up having to do it all manually, booting from your floppy Workbench once again.



IDE drives usually aren't that fast, but this performs surprisingly well, clocking in at 593K per second when run through SysInfo. Even so, when it comes to reading directories, it lags behind other drives, such as the Reference 100.

As for RAM, it can hold up to 8Mb of ZIP chips. To fully populate the board, you'll need to remove the mechanism from the drive, but this shouldn't be a problem as long as you're careful with it (hard disks don't like to be knocked about). The supporting software has a RAM test option, and let's you do a low-level format and re-partition the drive.

Although there's no through port at the rear, there's provision inside the case to add another 2.5" IDE mechanism. This could double your storage capacity in one fiddly move. Apart from the poor installation software, the Alpha Power is an impressive drive, both large enough and fast enough to satisfy the needs of most, with the added security of a sturdy steel housing.

GVP HD8+

£499 • 120MB UNPOPULATED • SILICA SYSTEMS • 081 309 1111

The HD8 comes in capacities ranging from 42 to 120Mb, and uses fast Maxtor or Quantum drive mechanisms. Although it's supplied unpopulated, it has space for up to 8Mb of 16-bit RAM and you can even plug in a PC emulator for only £100.

The drive is styled to match exactly the A500 and it plugs into the computer's side expansion slot. A game switch lets you turn the drive off if any games object to it. I can definately say that this is still the best choice for those on a budget.

COMMODORE A570 CD ROM DRIVE

£149.99 • SILICA SYSTEMS • 081 309 1111 • (1MB CHIP RAM REQUIRED)



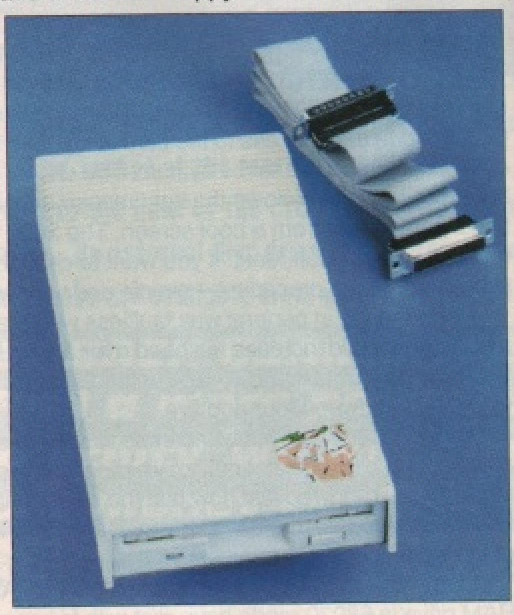
This is Commodore's offering for people who wanted to join the CD ROM revolution as heralded by the CDTV. The A570 can now be picked up for the give away price of £149.99, which must surely make it the cheapest CD ROM drive in the world.

It plugs into the side of the A500 (with Kickstart 1.3 or higher) just like a hard drive. However, it doesn't let you write to disks but you can read from CD ROM disks, which are capable of storing over 600Mb of data. Although far slower than most conventional hard drives, its vast capacity and changeable disks more than make up for it.

21 MB FLOPTICAL DRIVE

£289-£389 • POWER COMPUTING • 0234 843388

Probably the most exciting new drive technology is to be found in Power's floptical drive. Although it uses three and a half inch floppy disks, these are no ordinary floppies – they can hold 21Mb of data.



The drive connects to your computer via a SCSI interface and comes in two varieties – an internal unit for the A2000 and an external for the A500 or whatever. Needless to say, the SCSI interface is not supplied so owners of a computer other than the 2000 will need to buy an interface, or own a suitable SCSI drive already (such as the GVP HD8 or A530 Turbo).

With a data transfer speed of 109,060 bytes per second the drive is significantly slower than a hard drive as it doesn't use high-speed rigid disks, but the bonus of being able to change disks more than compensates. Well worth a look and very fairly priced.

GVP A530 TURBO

£699 • 120 MB • SILICA SYSTEMS • 081 309 1111

The A530 Turbo uses the same mechanisms as the HD8+, but includes a 68EC030 accelerator and supports 32-bit RAM (which is much faster that the HD8's 16-bit variety).



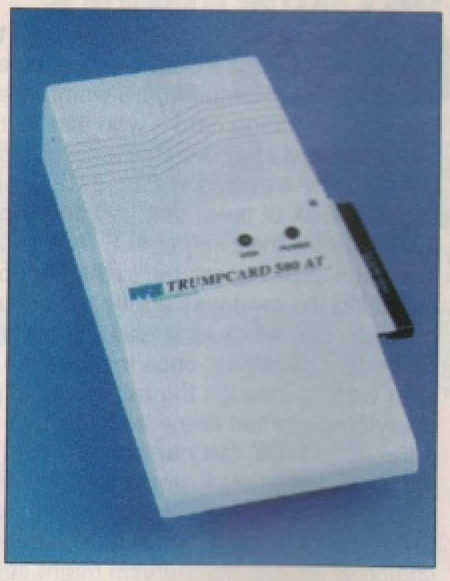
Data transfer speeds of 987,979 bytes per second make this one of the nippiest drives in town!

It's even more user friendly thanks to its 'intelligent' on/off switch that automatically activates the drive when you turn the computer on.

For A500 owners this is the creme de la creme.

TRUMPCARD 500 AT

£277.28 • MICROPACE • 0753 551 888



Another IDE drive, the Trump Card 500 AT has a rather flat, wide appearance, but still blends in with the Amiga quite well. The plastic case should suffice for most setups, but obviously won't offer as much protection as a steel one. It comes pre-installed with Workbench 1.3, so all you need to do is plug it in and switch on. All the Workbench files are put in their own partition, leaving the rest of the drive free for all your own software.

With 120Mb, it's one of the bigger drives, and there's enough room on the disk to meet the demands of most applications. Its access rate of around 620k per second is not particularly fast. It can hold 2, 4 or 8 Mb of RAM, and takes standard SIMM modules. The supporting software, supplied on floppy and on the hard drive, has all the usual memory testers and disk formatters, should you need to re-partition or format the drive. There are no through ports.

Compared to some other drives, the Trump Card is a breeze to use. Coming pre-installed, it's a good option for anyone who doesn't want to get their hands dirty in the Shell. It performs well, without any fuss.

REFERENCE 100

£329 • EVESHAM MICROS • 0386 765500

The drive comes pre-formatted, but uninstalled. Installing it yourself is easy enough – just a matter of booting with your Workbench and entering a line in the Shell from the instruction book. This copies your Workbench across, and the drive is ready to use.

As the name suggests, it's got a 100Mb capacity. It uses a SCSI interface, and even though the data exchange rate of 424K per second is below that of the IDE drives here, it's actually faster in many practical applications. On the RAM side, it can take up to 4Mb of SIMMs. The supporting software is pretty comprehensive, filling three disks with RAM testers and disk utilities. Cased in a sleek steel box, it should be able to withstand a few knocks. An external power supply is included as standard. Further expansion is made available via the SCSI through port at the rear. Also on the back panel, you'll find a 'game switch'. This disables the drive to save you having to disconnect it when playing incompatible games. Additional dip switches allow you to toggle the auto-booting, the RAM and the hard disk.



The Reference 100 gives the impression of being a quality product. It's fast, well-built, and comes with some decent software. Certainly one of the best all-rounders.

COMMODORE A590

£179 • 20 MB • SILICA SYSTEMS • 081 309 1111

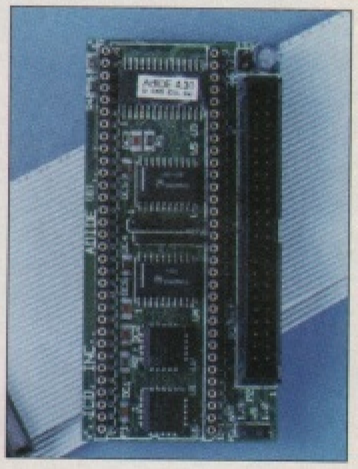
A paltry 20Mb are all that's on offer with the storage capacity. The access time is 150K per second, which is a fair bit slower than the competition. On the good side, it comes pre-installed with Workbench and Extras, so there's no faffing around before you can use it. Other hard disk utilities are included. The drive uses an XT system, but there's a SCSI through port for further expansion. Up to 2Mb of CMOS DRAMs can be installed inside the unit. An external power supply comes with it.The A590 looks dated now, with small capacities for both RAM and disk space, and a slow access speed, too but it does AutoConfig properly and is guaranteed compatible.



ICD ADIDE 2

£70 • POWER COMPUTING • 0234 843388

If you are looking for a cheap solution to your ever-growing storage problems then it may be worth considering an IDE interface. Possibly the most minimalist of these is the AdIDE board from ICD. Of course if you have a 600 or a 1200 you already have an IDE interface, and if you have a 1500 it is better to get a Zorro card instead. The main beneficiaries of this system will be owners of the now defunct A500 and A500+.



The AdIDE is another one of those disturbing interfaces which plugs into the processor slot. Not only does this entail a lot of work with pliers and screwdriver, but it also means that your chances of having anyone fix your machine under warranty are long gone (mind you, you're in trouble these days even if you do have a warranty).

The plus side of all this is that on the 500s you could get hold of one of those nice 2.5 or 3.5 inch IDE drives and mount it inside the case. Power could be a problem though. The drives themselves are cheap, but as with all IDE interfaces, a hard disk is about all you can add.

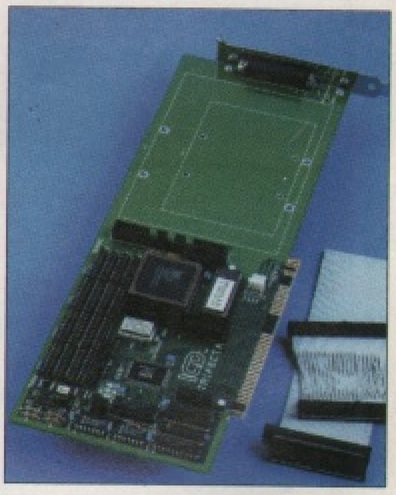
If you aren't afraid to rip the heart out of your machine and you trust yourself to plug in the board the right way up, this could be an ideal solution for financially restricted owners of A500s and A500+s.

A1500/2000 DRIVES

ICD TRIFECTA 2000

£139 • BARE INTERFACE • POWER COMPUTING • 0234 843344

ICD have certainly been very busy recently, and if this hardcard is anything to go by they haven't been wasting their time. Using the latest manufacturing methods, the Trifecta 2000 packs every possible feature short of an accelerator onto one Zorro card. Available in EC and LX versions, both models support up to 8Mb of ZIP-based Fast RAM, and fitting memory here will actually speed up any drives controlled from the card by providing some cache space.



The availability and price of IDE drive mechanisms means the Amiga can benefit from the PC world, and the Trifecta allows up to two low-cost IDE drives to be added. One can be bolted to the card, but the other will need to find a home in a nearby bay.

The IDE interface is very fast (faster than the A4000's), and clocked in at a cool 1,041,631 bytes per second on an 68030 based Amiga. The only reason for choosing between the EC and LX cards (apart from the price) is whether or not IDE isn't enough, and you also need a fast SCSI2 interface. If you opt for the LX version with its SCSI2 option – or you upgrade the EC up to LX standard – you open the door to all sorts of weird and wonderful peripherals.

Apart from rather ordinary SCSI hard drives, you can add floptical drives, optical drives, magneto-optical drives and any other drives ending in -optical that are likely to be developed. When funds permit, you could even add a SCSI2 compatible device for some theoretically blistering speeds – although it has to be said that the only drive we could test the Trifecta with was a rather old SCSI Quantum which returned a poor 920,880 bytes per second (actually slower than the IDE).

Installing the card is simple, as it slots directly into the nearest Zorro slot. The biggest problem has to be where you are going to fit all the possible hard drives – two IDEs and a SCSI inside, and six other SCSI drives chained onto the outside connector could provide about 8Gigabytes of storage if you have the cash, the desk space and the inclination.

The good range of set-up software includes support for the rather idiosyncratic AdSpeed accelerator (also from ICD) as well as drivers for AMAX and Cross-DOS PC partitions. The Trifecta has got to be the ultimate in hard cards – featuring memory expansion facilities and a dual IDE interface is good enough for the price, but the option of a fast SCSI2 interface makes it the best bargain A2000/A1500 owners are likely to see for some time.

»



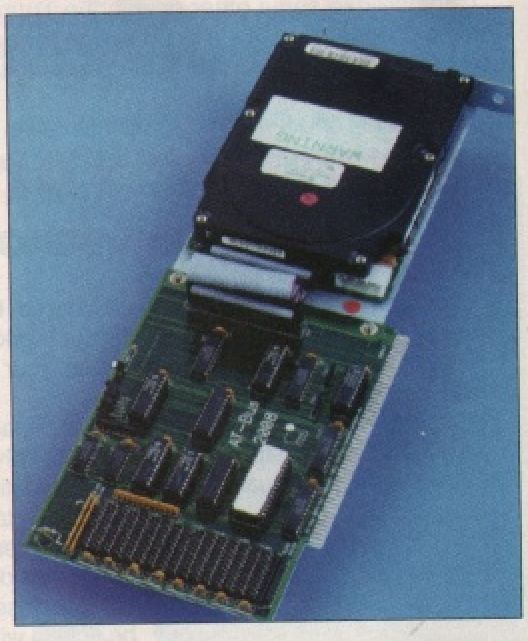
ALFADATA AT-BUS 2008

£199 • GOLDEN IMAGE • 081 365 1102

When I first saw the AT-Bus I thought there had been a mistake and someone had sent me a PC card by mistake. But no, there in tiny white print on the rather stark circuit board was the label 'Zorro II', so there was no doubt this was an Amiga card – who else but Commodore would name an interface standard after a mythical swordsman? The AT-Bus 2008 is produced in Germany by a company called BSC, and judging from the name on the the supplied disk of programs and development notes (ALF2) it seems to have evolved from the original ALF (Amiga Loads Faster – groan) interface which has been skulking around in the shadow of GVP for quite some time.

Fitting the card was a trifle tricky, and in the end a pair of pliers had to be taken to the blanking panel in order to convince it to locate in the slot properly. Thankfully, once in place the computer fired-up as normal, and after wading through the rather stilted pseudo-English installation program everything worked fine – another icon to play with on the Workbench. Although an IDE mechanism at heart (IDE is the PC standard, hence the 'AT-Bus' name), ALF works by emulating a SCSI interface.

It's all rather confusing, but thankfully it works perfectly. In fact, Commodore use the same principle to add IDE drives to their machines.The choice of an IDE mechanism might seem disappointing when everyone else seems to be raving about SCSI, but there are several distinct advantages to going the PC route. Firstly, IDE drive mechanisms are a great deal cheaper than their SCSI counterparts, and secondly any IDE drives you buy can be added to an AGA Amiga if you upgrade at a later date. The version of the AT-Bus we reviewed came with a 40Mb 3.5 inch Seagate IDE drive bolted to it, which turned in a very respectable access rate of 1,010,835 bytes per second on an 68030 based Amiga.



Although nothing like the quoted 10Mb/second speeds of mythical SCSI2 devices, ALF has certainly fast enough for day to day use. The bonus feature of up to 8Mb of ZIPs makes this an ideal card for both experienced users needing some extra room, and the beginner looking for a first hard drive.

HOW THEY COMPARE

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Manufacturer	Alpha Data	IVS	Evesham Micros	Commodore	GVP
Size	65 Mb	120 Mb	100 Mb	20 Mb	120Mb
* Speed	593K per sec	618K per sec	410K per sec	150K per sec	988K per sec
System	IDE	IDE	SCSI	XT	SCSI
Ease of installation	Poor	Pre-installed	Average	Pre-installed	Pre-installed
Supporting software	Average	Average	Good	Good	Excellent
Max RAM	8 Mb (ZIPs)	8 Mb (SIMMs)	4 Mb (SIMMs)	2 Mb (CMOS DRAMs)	8 Mb (32-bit SIMMS)
Through ports	Internal 2nd IDE	None	SCSI	SCSI/XT	Mini slot and SCSI Interface
External power	Optional	Optional	Supplied	Supplied	Supplied

Model	21MB FLOPTICAL	A570	Trifecta 2000	AT BUS 2008
Manufacturer	Power Computing	Commodore	ICD	Alfadata
Size	21Mb removable disks	600Mb+ (readable only)	N/A	N/A
* Speed	109K per sec	156K per second	1042 to 5526K per second	1011K per sec
System	SCSI - needs interface	Proprietary interface	SCSI2 & IDE	IDE
Ease of installation	Easy if you get all the bits!	N/A	Easy	Hard
Supporting software	Poor	N/A	Good	Medium
Max RAM	None	2Mb (CMOS)	8 Mb (Zips)	8 Mb (ZIPs)
Through ports	SCSI	Audio through ports	SCSI2	None
External power	Supplied	Supplied	N/A	N/A

* Speeds according to SysInfo 3.11

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A CONVERSATION WITH LEW



This month CU was fortunate to talk to Lew Eggebrecht, Commodore's Vice president of Engineering and designer of the CD32 console.

Lew Eggebrecht started his life in computers 24 years ago when he left college to join the fledgling company IBM. He was part of the team that developed their first Reduced Instruction Set Chips (RISC). Later he moved to Atlanta where he worked with the vice president on low end systems. He's stayed with sub-mainframe sized systems ever since.

From IBM he was drafted to Commodore as a consultant on their PCs, in particular working on the next generation of PC compatibles. Having already worked with Apple and IBM, he was finally moved to the Amiga about which he knew absolutely nothing. That in itself was challenge enough for Lew and he promptly started work on the next generation Amiga chipset – a move which eventually resulted in the AGA chips and of course Lew's personal baby, the CD32.

Acknowledging the fact that the Amiga has been left behind by the PCs in the race to find a mass market computer, Lew says 'We're trying to demonstrate credibility and an ability to produce new products.' In other words Lew and his team are out there trying to show the business world that the Amiga is every bit as good, if not better than, the popular computers. To achieve this he's made himself more accessible to people so that the technology can become more widely known and understood.

When Lew took over engineering at Commodore, the AGA architecture was already completed, but nobody was doing anything with it. A kind of unfocussed malaise had fallen over the development team and although AGA existed, they hadn't come up with a machine to put it into. Lew's first action was to give the team a proverbial boot up their collective backsides and give them clear development objectives (which they had largely lacked until that point). The result was the A4000, then the A1200.

Since then Lew has been working on the next generation of Amigas, including triple A architecture and true colour graphics. Obviously the CD32 has occupied a great deal of his time, and it's expected that the peripherals for that will keep his team busy for a couple of months yet. After that? Well, read on as Lew answers our questions...

CU: Do you ever feel that hardware design is compromised by marketing objectives?

LE: Yes, all engineers feel that their designs are compromised by market requirements. The major requirement is cost. All engineers would love to be able to ignore cost targets in a system design.

CU: What factors determine where hardware is manufactured?

LE: The primary factors are competitive manufacturing costs; i.e. labour costs, facilities costs and special duty (import tax) considerations. Also of importance is the quality and reliability of the work force.

CU: Are you completely happy with the IDE interface on the A4000?

LE: Remember that the A4000 is actually a family of systems with different price and performance targets. The IDE costs less than one dollar to add to the A4000 and makes good sense on the EC030 class systems. SCSI is more appropriate on the 040 and A4000T class systems and is thus available as a feature on the A4000 and as standard on the A4000T.

CU: Surface Mount Technology enables cheaper mass production, but does it cause design problems?

LE: Surface mount technology (SMT) is less costly and much more reliable. It causes no additional design problems, and in fact some components are only available in SMT packages.

CU: Aside from the marketing aspects, how feasible is a portable Amiga?

LEW: A portable Amiga that is competitive with IBM or Apple systems is not technically feasible at this time.

CU: Do you feel that a sufficient market yet exists for such a machine?

LE: Personally, I don't believe that a large enough market exists to devote any resources to such a product at this time.

CU: Do you have plans, however vague, for adopting reduced

instruction set chip (RISC) technology?

LE: Yes, we are very actively investigating alternative RISC architecture for use in the Amiga.

CU: Are new developments in Amiga technology market led or technology led?

LE: Most new developments are technology led. In this industry it is common to have technologies for which markets do not yet exist.

CU: How much of a problem is backwards compatibility when designing a new Amiga?

LE: Backward compatibility is a major design issue and effort for new products. With limited software we cannot afford to make existing software or development tools obsolete.

CU: By constantly attempting to maintain backward compatibility, Commodore has created a market which expects this from new Commodore machines. When is it time to make the break, and forget about compatibility in favour of a more powerful and wholly original machine?

LE: We are presently planning a new generation of Amiga systems based on RISC and new graphics architecture. Plans are to support both Motorola and RISC to provide users with a migration path from one technology to the other.

CU: Aside from SCSI cards, bridgeboards and accelerators, which upgrades do you think Commodore should provide itself rather than relying on third party manufacturers?

LE: We need to concentrate our resources on the systems, units and key peripherals and new technologies that will eventually end up on the motherboards of our computers; i.e. audio, digital signal processing (DSP), full motion video (FMV), CD ROM, Local area networks (LAN), etc.

CU: Why is there such a delay between the release of new Amiga technology and the update of the Amiga reference manuals?

LE: I believe we have improved the lead time and quality of manuals on the A1200 and A4000. Manuals take time due to the effort of translating them.

CU: What technological advantages do you think the Amiga has over its rivals in business?

LE: Our major advantage is our multi-media capable Amiga chip set and multi-tasking Amiga DOS.

CU: Does it sadden you to see your technological efforts marketed badly as they have been in the past?

LE: Everyone would like to see more marketing efforts. More marketing targetted properly early in the life of the Amiga could have helped significantly.

CU: What are the most important hardware features that you think should be present in the next generation of Amigas?

LE: RISC processors, real-time 3D animation, 16-bit sound, high resolution screens (greater than 1K x 1K) and true colour graphics.



And what does the world's top Amiga engineer read in his spare time?

CU: Do you think that there's any point expanding the colour resolution of the AGA chipset?

LE: Yes. The next generation Amiga chip sets will have both greater resolution and increased colour depth.

CU: Is there any likelihood of seeing a high-res flicker-free (as standard) Amiga for the mass market?

LE: The cost of monitors capable of showing such a display needs to come down dramatically before this becomes a mass-market prospect.

CU: Why do think so few manufacturers actively supported the Zorro III standard?

LE: Because many adaptors don't need the Zorro III's capabilities, designers try to capture all market opportunities.

CU: What one thing would make your job a lot easier?

LE: More engineers.

CU: What do you say to people who complain that a new Amiga is released every six months?

LE: I wish this was true.

CU: Do you consider the CDTV to be a mistake? What would you have done differently?

LE: Although it wasn't as successful as we had anticipated, we gained invaluable marketing and technical experience from it.

CU: How much of the CDTV's technology can be found inside CD32?

LE: A lot of technology and experience from CDTV is in CD32; i.e. CD ROM DRV, Development tools. Many CDTV titles will operate on CD32.

CU: Don't you think that the CD32 is a tremendous risk considering the market dominance of Sega and Nintendo?

LE: No. Sega's MegaCD is only 16-bit with poor performance and software, and Nintendo has no CD product at this time.

CU: Why did you develop the A600? Are you aware of the tremendous amount of ill feeling generated towards Commodore by those people who rushed out and bought what they thought was the next generation only to find their machine junked after less than six months?



Many lessons learnt during the development of CDTV proved invaluable when it came to laying plans for the CD32.

Overall user-friendliness was an important consideration so thankfully there are no more caddies just a simple top-loader.

»

» LE: The A600 was originally planned as a low end C64-like replacement. It was originally called the A300. Unfortunately, it was marketed as an A500 replacement. This was a mistake.

CU: How have the present cutbacks at Commodore affected R&D. Has this had any effect on the rumoured A1400 or A8000?

LE: We have taken staff reductions in Engineering but the core development group is still intact with no major effects upon new systems development schedules.

CU: It was mentioned at the recent press conference to launch the CD console that the forthcoming triple A machines will be five times faster than the Pentium chip. Is this true?

LE: Pentium is approximately 60 MIPS. The highest performance RISC system DEC alpha and HP-PA only achieve 200 MIPS. I don't know of any system that is five times as fast as Pentium.

CU: Considering the constant pressure from console rivals, why doesn't CBM develop any decent Point-of-sale demos to show off the Amiga in shops?

LE: We will be adding new demo capabilities to support Demos.

CU: Obviously CD ROM is seen by many as the future of computing. Where does this leave 'smart card' technology? Do you expect to see that grow on the Amiga, or was the inclusion of a card slot an afterthought which nobody takes seriously?

LE: The two technologies are not comparable in any way; i.e. function, application or cost.

CU: In the CD32 CBM has a console which beats any other on the market. Sega have already announced a virtual reality headset for their machine – is it likely that CBM will explore a similar route?

LE: Yes, we expect third parties to add virtual reality applications and peripherals to the CD32.

CU: What's your opinion of virtual reality?

LE: This is an exciting new area just now being addressed by software developers. CD32 is one of the first consoles sufficient power to support virtual reality applications.

CU: Back to the subject of peripherals again, I believe games peripherals such a light guns, joysticks, etc. produce a much higher profit to development ratio than computers. Why don't CBM follow this avenue of business?



Here Lew demostrates the dangers of using superglue in a lacksadaisical manner. 'Has anyone got a hacksaw?

LE: With our limited resources we must concentrate on the base systems. Peripherals may have high margins but come with many inherrent support and logistical problems. Therefore in reality they provide lower total revenue opportunities.

CU: Do you plan to stick with Motorola-based chips? What are your thoughts on the 68060 and the pentium?

LE: We will continue with the Motorola 680xx processors. The 68060 seems to be coming late compared to the Pentium. After the 68060 we will switch to RISC-based design.

CU: What would be the specs of your dream machine?

LE: You have to give me a cost target to properly answer this question. In the real world there would never be a time when one could simply choose a machine with no consideration of its expense.

CU: How far away do you think 'intelligent' computers such as those seen in Star Trek are?

LE: Artificial Intelligence is still a long way off.

CU: Why was the Amiga's speech synthesis so poor considering the wonderful quality of its sound generators?

LE: Speech will soon be available on the Amiga in four languages. Its quality will be vastly improved over what you've heard before.

CU: There have been complaints about the lack of a DSP. Is it likely that we'll see an Amiga with one in it soon?

LE: Yes, but it's starting as an add-on adaptor for the high-end systems first.

CU: Has the importance of a DSP been overrated by the press or techies?

LE: Yes, I believe so. Many RISC processors can actually outperform DSP-based products. The cost of DSP sub-systems has been much higher than anticipated.

CU: Many people predicted that the first A4000s and A1200s were simply a 'stop-gap' measure released to stop Atari's Falcon from getting too popular. Is there any truth to this? If so, can we expected to see any changes to the design of either machine or will they forever remain in their current form?

LE: We do not consider Atari to be a threat. The form of the A1200 and A4000 will evolve slowly over time to improve function and costs but no major changes are planned.

CU: Do you feel that the price of the A4000 can be justified given the price of a 486 PC? And if so, why?

LE: Pricing is set in each country depending on competitive situations. I don't deal with pricing issues. I am most concerned with costs. In the cost area we are competitive with IBM clone systems.

CU: Which came first as a development idea the AGA chip set or CD32?

LEW: AGA.

CU: Apparently there will be a CD32 add-on for the A1200 and A4000. Is there any hope of such a device for non-AGA owners?

LEW: There will be a CD32 'add-on' for the A1200 and A4000. Such an add-on is planned for the A600 or A500.

CU: How soon can we expect to see the CD32 for the A1200/4000?

LEW: Late this autumn.

CU: And the FMV attachment?

LEW: The same time.

CU: Isn't it high time the Amiga's sound capabilities were upgraded, either to 8/16 channel or 16-bit (or both ideally)?

LEW: Yes. The new chip set will have 8 voices with 16-bit sound at sampling rates of 100KHz.

CU: What do you think was the single greatest challenge in designing CD32?

LEW: Achieving cost targets.

CU: Are there any comments that you would like to make?

LEW: The new Amiga CD32 is a great step forward for Commodore achieving a price/performance design point unique in the industry. We have high hopes for this product as a replacement for the CDTV and as a game console competing directly with Sega and Nintendo.

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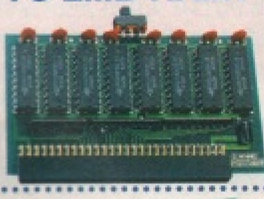
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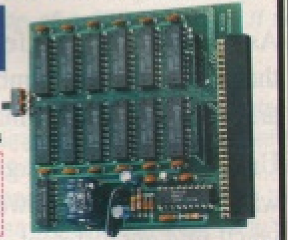
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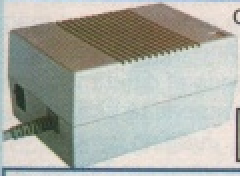
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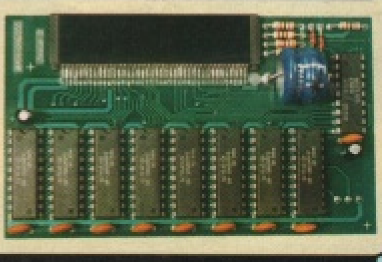
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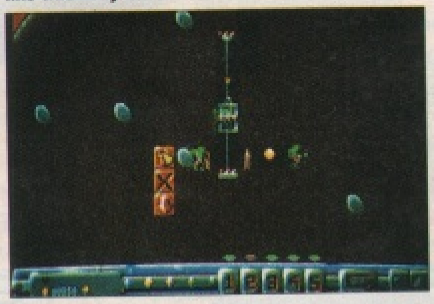
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When you sell the gems at the bank you'll be able to purchase better mining equipment, like this nifty lift.



With 33 zones, each composed of different temperate zones including ice, forest and desert, there'll be over 37,000 locations to explore. With hidden levels and fiendishly hostile inhabitants this game will surely take a long time to beat. Indeed, if that's not enough your diggers all have personalities and will go off and do their own thing if left alone for too long. This little twist is bound to make for frantic switching of characters as you not only try to protect them from the planet, the other team and themselves but also try to collect as many gems as possible.

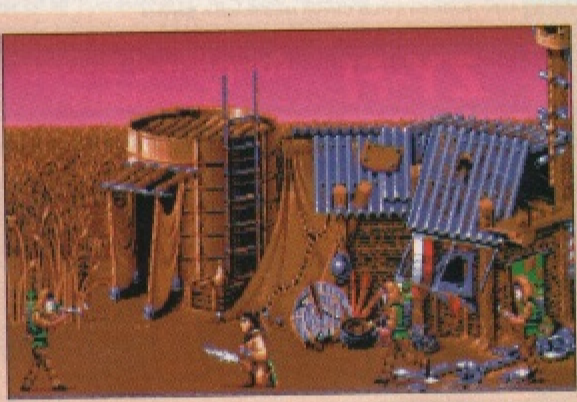
It looks like Toby, the coder, really has pushed the machine to its limits with the inclusion of a 64 pixel wide AGA background and smoothly graded copper skies. Due to make its first appearance on the Amiga CD in August, followed closely by the A1200 version, this *Lemmings*-like game is sure to tease puzzle fans for months. We'll have a full review soon.

TENSAI
GRANDSLAM

This scrolling beat 'em up certainly has an unusual storyline. It's set over 300 years in the future after a nuclear holocaust has devastated the Earth. Some lucky survivors managed to shelter from the horrendous effects of the radiation and have emerged clean but with fantastic telekinetic powers. Others were not so lucky and have mutated into hideous creatures.

Jealous of their former countrymen's health, the mutants set about attacking their city. The attack fails but their leader, Arashi, escapes to his stronghold. Many years later a child is born with The Power and it's decided to train him in its use so that he can go out and destroy the mutant leader.

'Oh no, it's a re-run of Children of the Corn.' Tensai crouches in a farm yard as mutants attack from all sides.



As you've probably guessed you get to play Tensai, the hero with The Power, and guide him through multiple levels of sword swinging, mind blasting action. The game features stylish post-apocalyptic backdrops with eight way parallax scrolling. As well as giving the many mutants a good kicking you'll have to solve various puzzles and find hidden sections if you want to reach the mutant's stronghold intact. Luckily for you Tensai has The Power, which gives him vast magical abilities, and there'll also be loads of different physical weapons to pick up.

Judging by what we've seen, Tensai is shaping up well. It's due for a late Autumn release so we'll bring you a full review in a few months.

We're back on the Children of the Corn set. The game is set to feature realistic sampled sound effects. Wonder what we'll get here? Corn swaying in the wind, heads being lopped off?





Even the wildlife is unfriendly. Having not listened to his Mum's warnings about playing near power lines, Tensai gets attacked by the local birds.

IMPRESSIONS

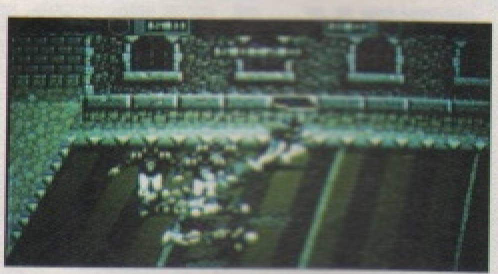
BRUTAL SPORTS – FOOTBALL

It looks like one player is sneaking off while his team members stomp on the opposition.



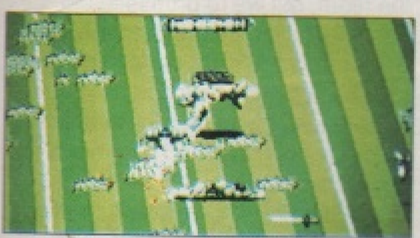
MILLENNIUM

Millennium's second forthcoming release is an altogether less serious, more violent affair. *Brutal Sports – Football* is planned to be the start of a series of futuristic, violent and funny sports sims where the aim of the game is to maim as many opponents as possible.



Player one has picked up the sword and is laying into the other team. Heads will roll for this. Literally.

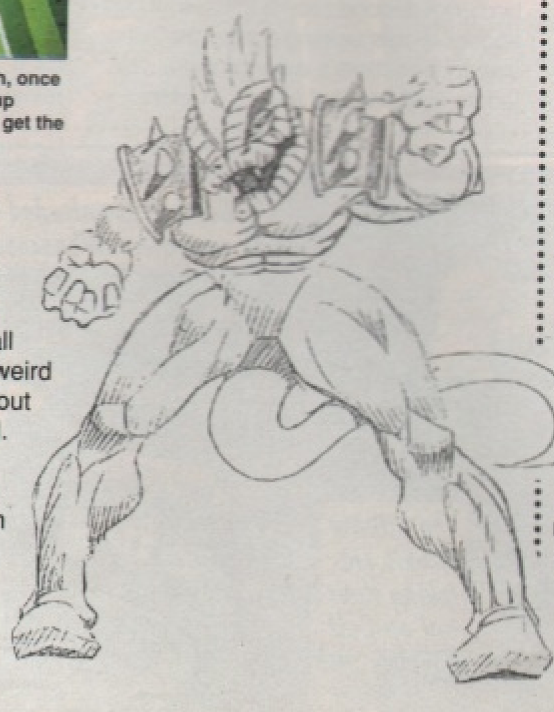
As its name suggests, it's a pseudo-American Football sim, but it bears little resemblance to the game we know today. Two teams of less than human players battle to score goals on a pitch that gradually degenerates into a muddy war zone.



Every player has an energy level which, once diminished, takes some time to build up again. If you make it to half-time you'll get the chance to rebuild your team.

As well as the usual run, jump, catch and throw action there's the opportunity to pick up various power-ups that equip your team with swords, shields and even magical ice that freezes all the opposition. There's also a weird pick-up that makes the ball sprout legs and run into the other goal. Best of all though, if you find the goals piling up against you, you can confuse the other team by decapitating one of them and using their head for a ball!

There will be various leagues to play in and a whole host of different man-made mutants all with different abilities. Judging by the sneak peek we had, the gameplay is fast and furious with lots of blood and guts spilled (all very tongue in cheek of course). In fact, the guys at Millennium love it so much they're having trouble finding time to do any work. If they manage to drag themselves away the game may be finished by late Autumn.





REALMS OF DARKNESS

GRANDSLAM

Realms is the next big offering from Grandslam. Billed as the role-playing game for people who hate role-playing games it does seem to offer a strange mix of gaming styles.

Set in the mythical Plains of Darkness, *Realms* is mainly an isometric RPG. I say mainly because it will also offer a side view of cave and building interiors as well as a plan view for detailed combat situations. The main isometric play area is mutilating (and if anyone can tell me what that means I'll be grateful!) and, if the screen shots are anything to go by, contains some beautifully evocative graphics.

Realms follows the adventures of a boy cursed with a long dead Necromancer's soul and his quest to cure himself of the torment he's suffering because of it. Along the way, he's likely to meet many intelligent non-player characters with whom he can have detailed conversations. Alternatively he can just blast them with a lightning bolt!

Progression through the six main plots will be governed by solving the many puzzles and negotiating your way through the vast villages and towns in order to find clues.

As with any RPG

Above: Here we have Stonehenge. What I want to know is where are the hippies or the thousands of policemen stopping them getting close?

there's going to be loads of magic to play with as well as the usual hacking and slaying of various monsters. In addition, there'll be realistic weather conditions affecting the landscape, sun and moon changes and numerous languages to learn.

Judging by what we've seen, *Realms* is sure to offer hundreds of hours of entertainment. It's due for release in September so we'll have a full review soon.



One of the many side on inside shots featured in *Realms*. Looks like the King is none too pleased to see our hero.



Winter has fallen on the Plains. Check out the tower in the distance, this is where the Necromancer's failed experiment took place and he was condemned to eternity in the Void.



BUBBA 'N' STIX

Core Design

Bit of a weird one this. Best described as a platform-cum-puzzle adventure, the game's hero, Bubba, has been transported to an eerie alien world with only a friendly alien stick for a pal. But this is no ordinary alien stick. This particular lump of wood is capable of all sorts of acrobatics and in the hands of a skilled user (that's you), it can be made to perform all kinds of tricks and stunts.

Set over seven levels, the game begins with Bubba crash landing on an alien world. From there, he has to traverse its many lands, using the stick to overcome the brain-straining puzzles that block his progress, until he finally manages to find a way back home. On his journey, he has to travel through forests, a derelict space ship, swamps, volcanos, sewers and the like. There are also absolutely tons of aliens to splatter and the graphic artists working on the game have come up with a quite incredible menagerie of weirdos.

Bubba's friendly stick (known as Stix to his friends) can be used as a truncheon to smash enemy nasties on the bonce with, or as a lever, snooker cue, tightrope balance, lightning conductor, javelin, baseball bat, handy platform, under-water snorkel, boomerang or any number of zany possibilities. Of course, translating all these uses into on-screen actions has been a major headache for the programming team working on the game. Everything is controlled from one single-button joystick and, although some of the sequences of tugs and fire presses are quite complicated, it's an easy-to-learn system that you'll be able to master in no time. Actions are triggered by joystick combinations, the position of the sprite on-screen and the proximity to puzzle-specific areas, so that the variety of moves and uses the stick can be put to are immense.

The game is crammed with spot animations, special effects, huge sprites, cartoon sequences and the like, with a whole host of zany sound effects thrown in to accompany the action. If you like your puzzle games hard and a bit left of field, then this multi-level brain-strainer looks like it'll be a welcome diversion from the run-of-the-mill platformers that have been clogging up the charts recently.





BLOB

Core Design



Looking and playing like a cross between *Mad Balls* and *Bounder* (two aging C64 classics), *Blob* is a 3D puzzle game made up of a number of tiled areas set at different heights. The star of the show is a tiny little blob-like creature (hence the name), who bears an uncanny similarity to Putty and other bulbous creations. Blob has to be guided over the multi-storey levels picking up trapped spodlets whilst avoiding all manner of enemy sprites, traps and obstacles. In all, there are 50 levels to navigate, the aim being to collect the required number of spods within a specific time limit. Fail to reach the exit in time and an anti-blob creature appears which chases you about the screen until it squeezes the very life out of your blob.



Not all tiles are the same. Some disappear underfoot, others trigger the appearance of more tiles, while some are sloppping or slippery and might propel you to your doom. Fall off the sides of a tile and it's a long, long way down! Other obstacles include tiles that spew out an endless torrent of bullets whilst spinning blocks will try and mash your sprite into the ground.



While the game doesn't look particularly swanky, Jonathan has spent a great deal of time animating the main sprite so that the our hero can spin round, bare his teeth, shuffle his tiny legs, frown, stick his tonue out and all manner of other expressions. At the moment, he's putting the finishing touches to the game, tweeking the levels so that there is always something to do and the pace and feel of things is just right. Full review next issue.

SEEK AND DESTROY

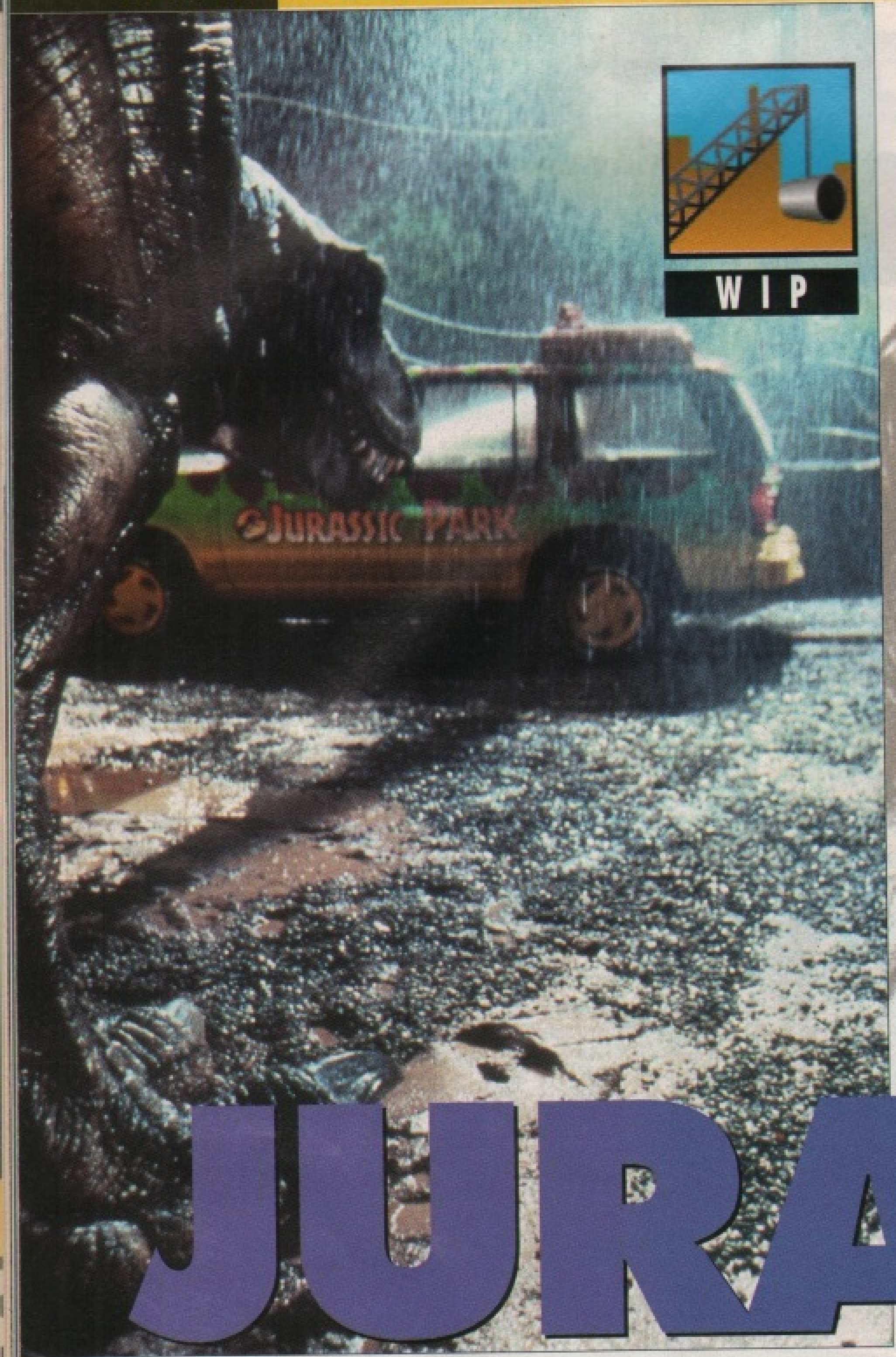
Vision Software

After scoring a massive hit with PD game, *Cybernetix*, and their first full-price release, *Woody's World*, Vision Soft return with an out-and-out blaster. *Seek and Destroy* puts the player in control of a state-of-the-art 'chopper, equipped with all sorts of deadly weapons, and promises nothing but non-stop destruction.

If you cast your mind back to our April issue, you might remember a review of a top PD game called *Transplant*. This fast-paced shoot 'em up was a bit like *Asteroids*, but instead of the ship moving about the screen, the ship stayed in the middle while the screen scrolled and rotated around it. Vision Soft have incorporated such a system into *Seek and Destroy*. Although it's initially off-putting, it soon becomes second nature to have enemy sprites swirling across the screen, and there's a handy radar system to keep track of enemy 'copters.



Things are still at an early stage in the development process, so all we've seen so far is a scrolling demo. Graphically, things aren't up to the standards we've come to expect from the team, but we're promised big changes in the final version. Sonic-wise, too, there's still not a lot to crow about – even the helicopter's whirring rotor blades sound like they've sampled someone banging together a couple of coconuts and speeded things up. Still, it looks like a frantic blast, so keep your eyes out for a review later in the year.



WIP

From the depths of time and Ocean's Manchester offices comes the game of the movie of the book. Jon Sloan goes behind the scenes for a sneak preview of the action...

OK, so you know it's a film about dinosaurs, but what's it all about? Well, here's a quick run down of the screenplay.

The plot centres around a soon to be opened theme park on a small South American island. Utilising brand new genetic engineering techniques scientists have used dinosaur DNA found in a prehistoric amber-encased mosquito to recreate living dinosaurs. The Park's owner, John Hammond, has invited an eminent team of scientists to view the Park before it opens in order to give it the official seal of approval. Unfortunately, things go wrong (don't they always?) and the Park's security system breaks down just as a hurricane hits the island. In the resulting confusion the dinosaurs are released and they're hungry for flesh...

PLOT TRANSFER

Preproduction on the film started in August 1992 with principal filming commencing on location at Kauai. In a funny quirk of fate real life followed fiction when Hurricane Iniki devastated the island. Fortunately most location filming was finished by then and the crew returned to Los Angeles, where five enormous sound stages were waiting for them. It was here that the special effects team really came into their own. To make the dinos look as realistic as possible ace Director Steven Spielberg assembled a team of film special effects wizards considered to be the best in the industry; these included Stan Winston, Dennis Muren, and Michael Lantieri, plus loads more from Industrial Light & Magic. These guys have worked on such amazing films as Terminator 2, Aliens and Star Wars so it's unlikely that the film will flop.



JURASSIC



Top: Grant takes on the baby T-Rex. The team have still to decide whether or not Grant will be able to kill the T-Rex. Even if the answer is yes it's likely that the only weapon capable of doing so will be well hidden.



Right: One of Grant's earlier encounters with the vicious Velociraptor comes here. Fortunately, the electric fences are still working!



STARRY EYED

Instead of attracting a high-profile cast (and incurring outrageous fees) Spielberg has gone for a second-tier human cast. Perhaps he reasoned that it would be the inhuman cast that would be the big draw. Anyway, here's a list of who plays whom.

DR ALAN GRANT
Played by: Sam Neill
The main star, Dr Grant is a paleontologist attracted to the Park by the prospect of seeing his life's work for real and to validate the quality of the dinosaurs.

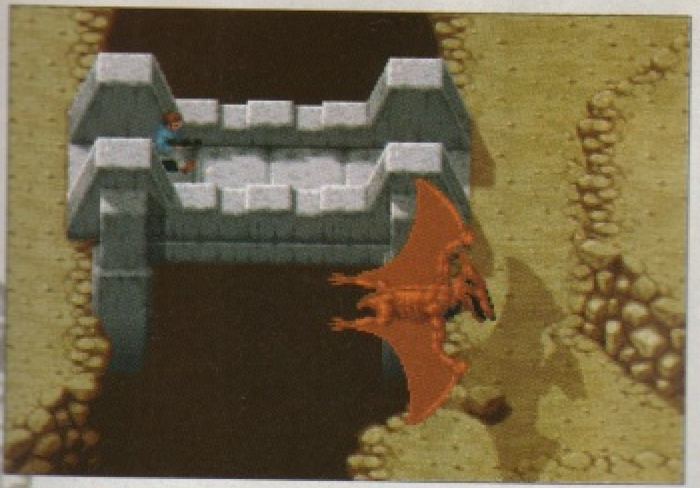
DR ELLIE SATTLER
Played by: Laura Dern
Sattler is a paleobotanist and Grant's co-worker. She's here to take a look at the plant life that's been recreated at the Park.

JOHN HAMMOND
Played by: Sir Richard Attenborough
Hammond is the multi-millionaire genius behind the Park. He's the guy that had the idea of creating a theme park composed of dinosaurs.

DR IAN MALCOLM
Played by: Jeff Goldblum
As a professional mathematician and chaos theorist Malcolm has been hired to look at the systems at the Park to predict how they'll react to one another. He predicts disaster due to the unpredictable and complex interactions between the natural organisms.

TIM
Played by: Joseph Mazzello
Tim is Hammond's nine-year-old grandson and an avid dinosaur enthusiast.

LEX
Played by: Ariana Richards
Another of Hammond's grandchildren, this 12-year-old's computer skills may come in handy in getting the park back on line.

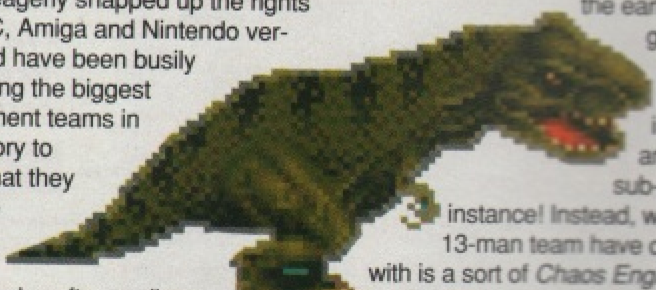


Jurassic's animators have gone to great pains to ensure that everything looks good. That even goes as far as giving the Pterosaur a shadow which moves realistically over the landscape.

But we'll have to wait until July 16th, when the film is released here, to make up our minds.

GAME CRAZY

That's the film, but what about the game? Manchester-based publishers, Ocean, eagerly snapped up the rights to the PC, Amiga and Nintendo versions and have been busily assembling the biggest development teams in their history to ensure that they make the game a success, too. Ocean's software director, Gary Bracey, views this license very differently. 'It's a once in a lifetime kind of thing. We want to make it unlike any other license that we've ever produced.' He's so enthusiastic about the project that it's hard to shut him up! 'This is Jaws with dinosaurs. This isn't just a film anymore – it's an event.' This time, though, his enthusiasm is justified.



Visually the game is very different to the earlier Ocean games – there's no driving section and puzzle sub-games for instance! Instead, what the 13-man team have come up with is a sort of *Chaos Engine*-style isometric arcade adventure with various 3D sections, very reminiscent of *Legends of Valour*, thrown in for good measure. You get to play the hero, Grant, as he frantically crosses the Park in an attempt to rescue Hammond's two grandchildren from the marauding monsters.

This may seem like a strange mix of game styles but from what we've seen it works well. The coders themselves are pleased with their results. Andrew Miah, one of the four main coders, is quick to point out the changes they've made. 'The 3D is unlike anything you've seen on the Amiga before. The graphics window is about three or four times bigger than *Legends of Valour's* and running twice as fast.' In fact, Matt Wood, one of the co-designers, likens the whole thing more to *Cadaver* with lots of puzzle elements creeping in to the blasting action. It has to be said though that *Jurassic* bears more than a passing resemblance to another Bitmap's game – *The Chaos Engine*. Matt leaps quickly to their defence. 'We first saw *The Chaos Engine* when we were part of the way through coding *Jurassic Park* and thought "Oh dear, it's going to look the same" but it looks a lot different when you see it moving.' To be fair that's true as the isometric section has a more realistic feel to it with the characters actually able to walk behind objects. You needn't worry about getting lost though as the backgrounds have been carefully designed so you'll be able to see the sprites through breaks in the leaves and vegetation.

ACTION!!!!!

Work started last November on an A500 platform due to the lack of availability of A1200 development kit, however when they got hold of one they transferred all development onto it. This means that we'll have to wait a little longer for the A500/A600 versions to appear. A1200 owners are in for a treat though as, apart from the obvious colour improvements, it will run much faster with the top-down bits scrolling at 25 frames per second. The 3D section too will be improved with all surfaces texture mapped. This part of the game is chock full of nail-biting atmosphere. This has been enhanced with a thumping sound track incorporating a heart beat which races when you're being chased. In an unprecedented move the coders were provided with a DAT of actual sounds from the movie to use in their soundtrack. This works to great effect as the T-Rex's approach is preceded by a distant ground shaking rumble before it screams onto the monitor to chase Grant.

Jurassic Park – The Game looks like it will live up to the precedent set by its big screen brother. Watch out for a full review soon.

The baby Triceratops is guarding its sick parent. The puzzle element comes to the fore here as Grant must find something to distract it.



PARK





The guys spent many hundreds of hours consulting reference works and even watching how Ostriches run to try to get the dinosaur's movements as smooth as possible.

THE INVASION OF THE DINOSAURS

In case you hadn't noticed it, Joe Public (that means you) has harboured a fascination for dinosaurs which started long before Spielberg's new baby was even a gleam in his eye. Try this little test: Pay close attention to the media world around you for one day and I bet that a dinosaur unrelated to Jurassic Park will make an appearance. Whether it's on TV on a show (The Dinosaurs), a cartoon (The Flintstones), or in a comic book (2000AD's Flesh series), or a re-run of some earlier dino-movie (from Godzilla to the god-awful Land Before Time films) you're bound to find some evidence of the existence of dinosaurs. If you switch off the TV there's no guarantee that you can avoid the invasion of the dinos, especially if you have a younger brother or sister. Every little kid has possessed some kind of dino toy at one time or another. In my day it was simple plastic models, lately they've gotten more sophisticated with the introduction of soft toys, called DinoRoars, that let out a cute roar when squeezed. Let's face it, dinosaurs are everywhere.



MONEY MACHINE

It will probably come as a surprise to learn that the film is only the tip of the iceberg as far as profits go. The real money is going to come from all the thousands of spinoffs, of which Ocean's game is but a small part.

Apart from the various video games there's toothbrushes, action figures, soap, burgers, sweets, duvets, and even underwear. There's even a Jurassic Park credit card. Presumably to use to buy all the rest of the Jurassic Park goodies. Incredible!!

The current largest grossing film of all time, in terms of license spinoffs, is Batman. That brought in an incredible $1 billion worldwide and MCA/Universal (Jurassic's owners) predict that the ultimate total for Jurassic could approach, if not exceed, that jaw-dropping figure. The key to achieving this is to keep the product in the public eye for a long period of time. MCA/Universal intend to do so by keeping the theatrical release as long as possible and then follow it up with a video; there's even the possibility of a TV series, a theme park and the inevitable sequel. Whilst it's unlikely that the non-human stars will make as much of an impact as the Ninja Turtles we're still going to see and hear a lot from T-Rex and his friends over the coming years.

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CU AMIGA SCREEN STAR

BLADE OF

Strapping on his mighty weapon, Jon Sloan steps into a world of beautiful warriors and brave women... or should that be the other way 'round?



The Amiga role-playing market is pretty tough to break into successfully. What with the amazing *Eye of the Beholder* series and, more recently, *Legends of Valour*, the standard of this genre has risen dramatically since its early days. There are quite a few hot games out there and RPGers are a choosy bunch.

Into this arena strides *Blade of Destiny*. Converted from Germany's number one role-playing system, Das Schwarze Auge (literally, The Black Eye), *Blade* is the first of the Northern Territories Trilogy. Set in the Realm of Arkania it's filled with strange characters with even stranger names, like Sir Shaun of Crispy (I kid you not) and Alrik v. Angbar. It tells the tale of a famous sword lost in the lands of the Orcs and of a brave band of adventurers who set out to find it. Actually, it's a little more complex than that, but you get the idea.

WHAT A BIG ONE

The first thing that strikes you about Blade is the sheer size of the map of Arkania – there's over 184,000 square miles of territory and more than 80 towns to visit, not counting the numerous hidden dungeons! With a play area this size it would be an easy cop out for the programmers to restrict you to a linear progression. Amazingly that's not the case. Your hearty band is free to travel and do almost anything and needn't follow a set route to achieving its ultimate goal. It's this freedom that makes *Blade* so wonderfully appealing. Your travels through the Realm will take you to many towns and villages looking for clues to the sword's location. When visiting you're bound to come across intriguing tales of local monsters that no self-respecting adventurers should ignore. These sub-plots not only serve to prolong the main game but also give it an added level of realism. And realism is a theme carried through the whole game – you actually believe that this place could have existed.

It's an established standard for this genre that you should view the action in 3D from the first-person perspective and, in that respect, *Blade* is no different. Although this can be a graphically exciting means of playing it can also be very limiting. For instance, other than sticking the warriors at the front tactics are difficult to execute. *Blade* has recognised those faults and offers a second viewpoint when you get into battle.



The town graphics do not bear comparison to the superlative *Legends of Valour*, but the auto map is useful for finding your way round the place.

CLASSY CHARACTERS

With 12 character classes available chances are that you'll find one close to your perfect image of what an adventurer should be. It's a good idea, though, to go for a finely balanced team of six heroes. It's no good facing up to a 50-foot dragon with six pickpockets! Try to get an even mix of fighters, magicians, rogues and hunters. That way the team should be prepared for most eventualities.



Jesters are all-round characters with experience of both wilderness and town survival techniques.



These guys are the barbarians in the game. Renowned for their love of drinking and fighting, they also make great sailors and explorers.

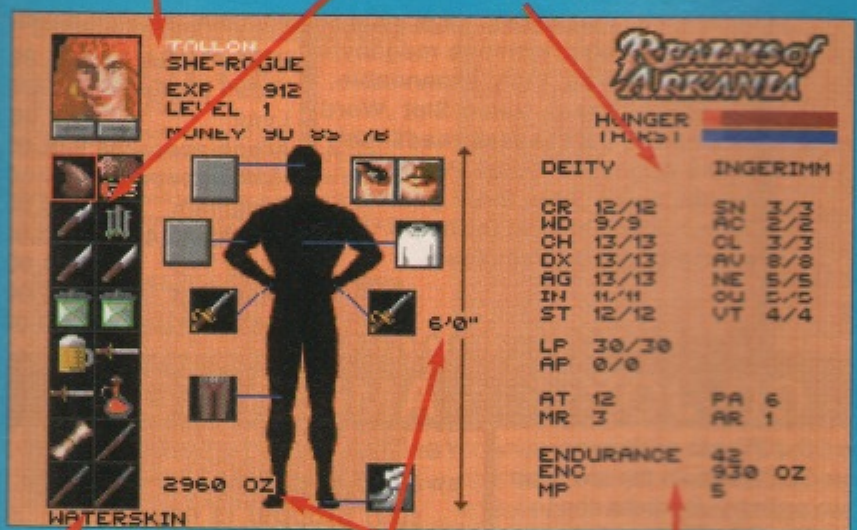


Masters of armed combat, warriors are useful in a fight. They are the only class able to handle the two-handed sword.



Missile weapons and tracking skills make Hunters great for fights on the road. You'll never be short of food with one of these in the team.

DESTINY

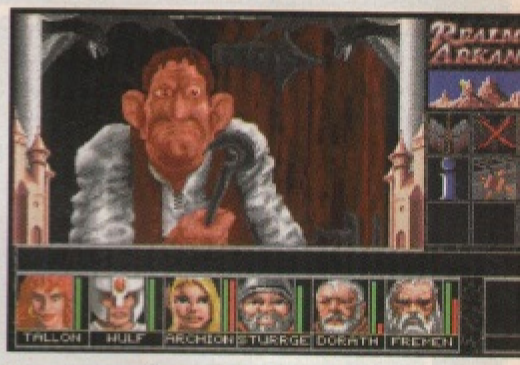


WELL EQUIPPED

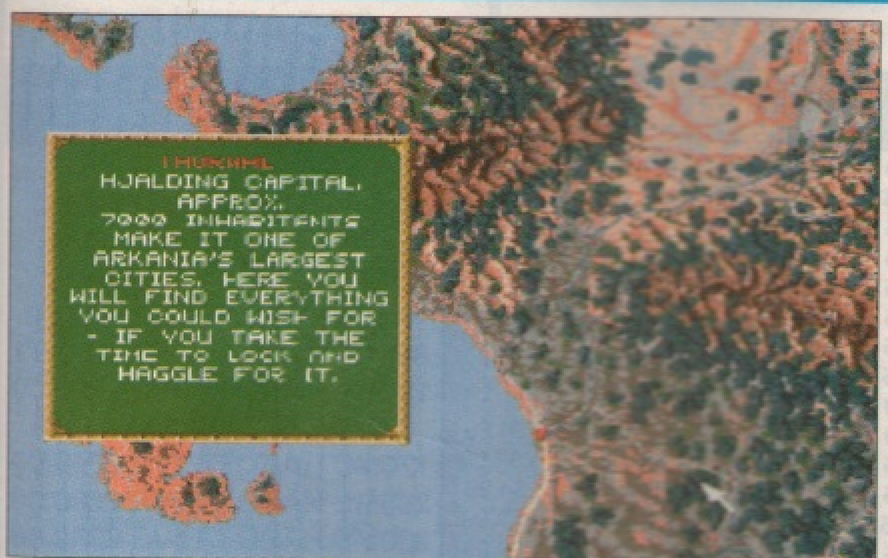
No well dressed adventurer should even think about venturing out into the wilderness or deep into some dank dungeon without taking his weapon. That's not all either, in *Blade*, just like real life, if you plan to spend the night comfortably under the stars it's wise to carry a bedroll, plus food, plus water, plus... well the list could be endless.

Having played a good range of RPGs over the years I think that it's safe to say that *Blade* offers you the largest choice of equipment and weapons ever. There are some weird and esoteric swords, a range of axes, plus rope ladders, shovels and some pretty nifty snow shoes.

What you eventually decide to take is entirely up to you, but there's a lot of factors to consider that don't normally make an appearance in other RPGs, including weather, terrain and wild animals.



There are many houses to visit, but few occupants will give you the time of day if you don't know them. Better beat it fast before he calls the town guard.



Travel between towns is easy to do but difficult to carry out safely. Simply find a signpost in town and this map screen will pop up. Click on a location to get info then travel there.

In a fight situation the screen shifts to an isometric perspective very similar to that in *The Immortal*. Whilst *Blade*'s graphics are nowhere near as good as those in *The Immortal* it is a brilliant way of organising battles. You can execute some high level tactics placing fighters, magicians and archers in appropriate positions. It's even possible to split the party into smaller groups and have your most perceptive characters scouting ahead for the many floor and ceiling traps that litter the dungeons.

ALTERED STATES

This changed view has allowed the graphics artists to have a field day, too, with every spell cast accompanied by an appropriate explosion or effect and, considering there are over 70 spells to choose from, that's a helluva lot of animations. This spell system must be the most comprehensive ever with spells for just about every situation from turning solids to liquid to blinding opponents with a lightning flash. Physical combat has been developed well, too, with fighters given the choice to guard, parry and attack at one of three levels of commitment. That realism I was mentioning earlier comes into play here with players able to fumble attacks and weapons and armour prone to breaking right in the middle of a pitched battle with 10 Orcs. It's a pain when it happens but overall it's tremendous fun. On the subject of pain your characters not only sustain weapon damage, but they can also catch a disease or get infected wounds!

Before I explode from using too many superlatives I've got to tell you that *Blade* does have its flaws. The graphics are far below what we have come to expect from this type of game. Whilst the static screens are very detailed and colourful the 3D ones are not. Dungeons are especially difficult to negotiate as the walls are a nauseating shade of blue



In a town, Rogues come into their own. Whether it's for picking pockets or locks they're a vital component in a balanced team.



Pandering to stereotype, Dwarves are short, like fighting and drinking and are excellent underground.



Masters of non-book magic, Witches are also skilled at evaluating humans and are very intuitive.



Apart from controlling the forces of nature Druids are capable of summoning and controlling demons.

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ALTERNATIVE BUYS

The RPG market is awash with games, some good, some not so good, and some utter rubbish. Here's a brief guide to three alternatives to *Blade*.



LEGENDS OF VALOUR

Featuring texture mapped graphics for extra realism, this game is the benchmark for non-linear adventuring. Players start in a massive city and basically have to find their quest before embarking on it. An excellent, smooth scrolling adventure.



EYE OF THE BEHOLDER I & II

These games set the standards in recent times for what an involved RPG should be. Eye II was released in early 1992 and is still keeping players perplexed. A very traditional game with players exploring dungeon-like environments, solving puzzles and doing battle with monsters.



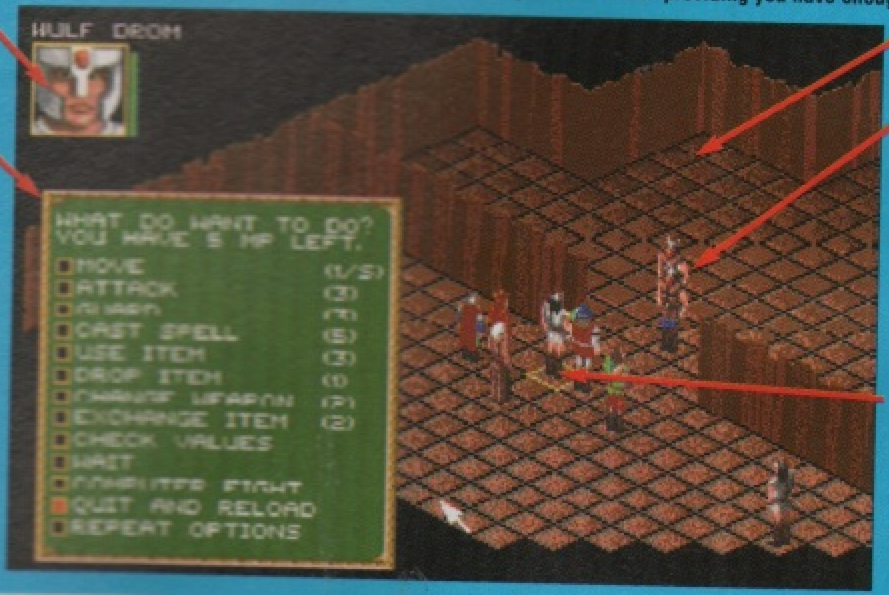
THE IMMORTAL

If the isometric combat screens appeal to you then buy this game. It is the most graphically detailed isometric adventure yet and offers a lot of gameplay. More an arcade game than a true adventure, it's fault lies in progress being strictly linear with instant death greeting a wrong move. The best thing is that it's out on budget.

HACK AND SLASH

It's inevitable, but no matter how hard you try to avoid it you'll find yourself in a fight sooner or later.

Anyway, once battle has commenced you'll be greeted with a screen like the one below. All combat is governed by movement points which vary from character to character. The amount you have varies according to what you're carrying, how strong you are and whether you've been surprised or not. It's a familiar means of sorting out fighting that all regular RPGers will be used to. It basically means that you can draw a weapon, move, decide to change weapons and attack providing you have enough points.



which serves to hide corners and doorways even when you're standing right next to them. Fortunately there's an auto map which clearly marks where you are and what's near. The towns, too, are very repetitive with whole areas empty of graphics – houses do not appear until you're about three squares away from them. The isometric sections are also quite poor with characters moving stiffly about. My final major moan concerns the combat itself, which, apart from it being difficult to target specific squares, is appallingly slow. Still, I guess these are the prices to be paid for the rest of the game's size.

IN CONCLUSION...

It would be impossible for me to go into detail about every aspect of *Blade* – it really is too huge to do that adequately here. There are over 70 statistics and skill areas unique to each player. But it's safe to say that if you've ever played a computer-based RPG and felt frustrated that it didn't do something that you know it should do then *Blade* will not frustrate you in the same way. There are limitations, after all it is governed by the coding and not by some Dungeon Master's imagination, but it is the most comprehensive RPG ever to appear on your Amiga.

This game may not have the graphical beauty of *Legends of Valour* or *The Immortal*, nor the intuitive control system of the *Eye* series, but if you can live with those failings then I can heartily recommend its purchase. CU



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GENRE:	RPG
TEAM:	ATTIC
CONTROLS:	MOUSE, KEYBOARD
NUMBER OF DISKS:	8
NUMBER OF PLAYERS:	1
HARD DISK INSTALLABLE:	YES
MEMORY:	1Mb

GRAPHICS	70%
SOUND	83%
LASTABILITY	98%
PLAYABILITY	93%

"Expensive and graphically uninspiring but, ultimately, this is an incredible game."

OVERALL 86%



As scientists Magicians tend to learn all they know from books. Don't mess with one if he's got a wand though.



More human than elven, the Green Elves are great with missiles and can often teach a magician a thing or two.



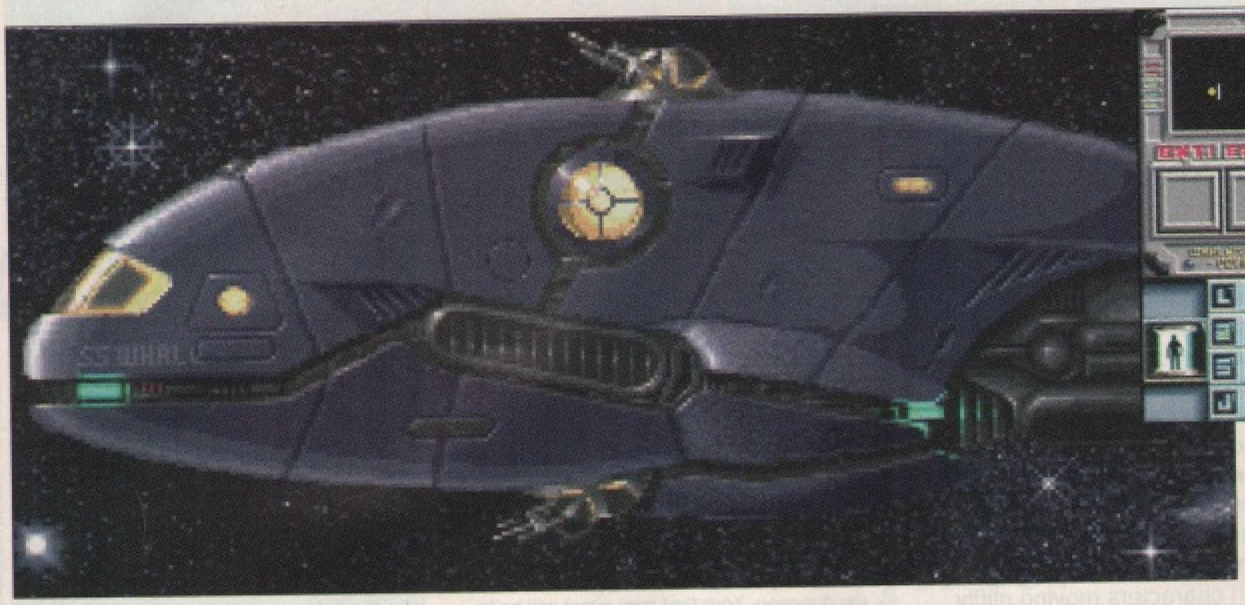
From northern Arkania these Ice Elves are masters of an unknown form of magic. They're also handy with missiles.



Silvan elves are great with a bow and, being the most secluded of the races, are excellent survivors in the wilderness.

Paul Presley spent his childhood summers in places like Llandudno, Towyn and Rhyl, so he seemed the perfect person to mis-read the title of Flair's latest.

WHALE'S VOYAGE





Top: Having beamed down to the planet (*Star Trek*'s got a lot to answer for) you get to explore the community *Eye of the Beholder*-style.

Left: Your ship. It's large, it's oval, it looks like a whale. Hence the title.



FLY ME TO THE MOON(S)

Have you ever seen the cockpit of a space shuttle? There are buttons, switches, lights and dials everywhere. On the walls, on the floor, on the ceiling, there's probably some in the toilet compartments too (but that's just an excuse for a cheap laugh so I won't mention it). Oh how I bet those brave pioneers of the final frontier long for the kind of control system seen in the Whale. You just pick your planet and press a single button to go there. No controls, no joysticks, no messing around with altitude adjustments and speed corrections. Just a single, solitary button.

Actually the Planet Selection screens do contain some of the finest graphics in the game, even if they are just life-sustaining, solar orbiting spheroids (planets to you and me, bub). Pick a planet and you also get a handy little description of what life is like there. It's all rather jolly, but with only six planets, sadly short-lived.



Let's see, how do you best describe *Whale's Voyage*? Hmm ... take *Elite*. Now take all the bits that made *Elite* good (the three-dimensional space flights and the nail-biting combat) and throw them out. Next reduce the hundreds of visitable planets to a total of six and add a sub-standard *Eye of the Beholder* routine to simulate planet exploring. Hey presto, *Whale's Voyage*. And boy does it flounder.

Games like this really irritate me and I'll tell you why. You can just picture the design meetings – four or five guys and gals sat around a pub table (or Biergarten since this was made in Austria) discussing their next project. 'Hey,' says one, 'let's do an *Elite*. You know space travel, trading, combat. It'll be great (or zoo-per, as I believe is a popular phrase in fashionable quarters of Vienna).' Unfortunately no one has the heart to tell these people that you can't 'do' an *Elite* as *Elite* was the quintessential space game and the only way you can cover it is if your name is David Braben since then people won't think you're just ripping it off. The other thing is that if you are going to go ahead and do a cover version anyway, you have to make sure that what you produce is not only bigger, but better than the original in the first place. *Whale's Voyage* fails on both counts so it's right up a certain creek without a certain instrument before it starts.



Shops on the planets' surface serve pretty much the same purpose as the one's in orbit. You can buy or sell your wares in order to make a profit, although occasionally specialist emporiums crop up (such as medical facilities).

GOING DOWNTOWN

It has a brave stab at being innovative, but sadly its blade of choice is as sharp as wet celery. You don't just control one character at a time but four, treating you to a more typical role-playing game environment when you venture down to a planet's surface. You know the form (or at least you should by now), first-person flick screening around the local town, bumping into wandering locals and exploring the various shops (none of which sell anything except trading goods).

Now this might have been quite good, after all *Elite* never went near the surface did it? Unfortunately in the same way that the space bit of it failed to capture any of *Elite's* good points, the role-playing element fails to deliver. The control system is one of the most unwieldy I've ever encountered. For example, to hit someone you first have to access the relevant character's icon menu, then you choose the Select Person icon, then you select which computer controlled person to hit, then you re-access the character's icon menu and select the attack icon. And just because you selected the opponent with one character, don't think you've done it for everyone. Each time a dif-

PARENTHOOD

While not the most comprehensive of character generation systems ever seen, the development section of *Whale's Voyage* is certainly ... unique. After all, what other RPGs let you pick the parents of the child, mutate him after birth, then send him through school and college?

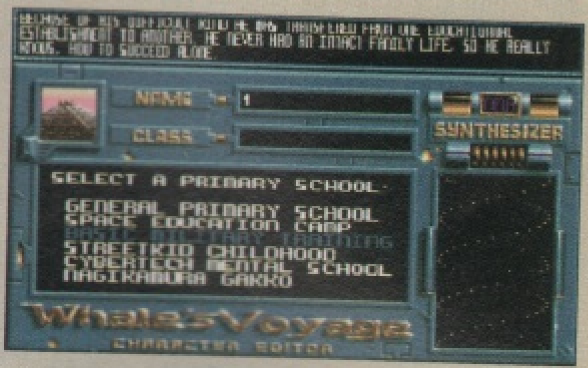
[1] First choose the parents. All you actually get to do is select what the father and mother look like from the five choices at the top of the screen. As to their personalities and skills, it's all up to fate. It'll be interesting trying to get that nice young blonde to mate with that slime creature from the planet Ooze though.



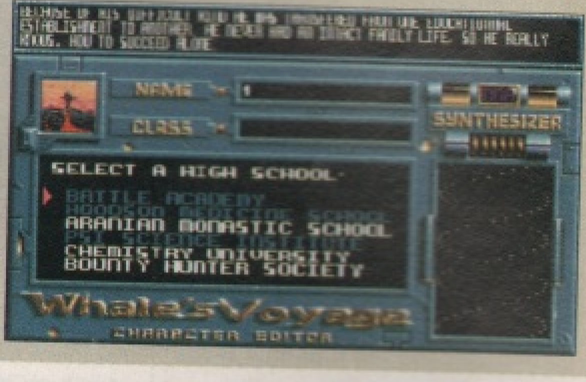
[2] Next, with the potential sprog's mom and pop sorted out, you get to mess around with its genes. Add a bit to its physical prowess, just a touch more intelligence and maybe a dash more social awareness. Well, it's better than leaving it all to fate and ending up with a young conservative on your hands.



[3] Ah, school. The best days of your life (except the bits when you're being beaten up, robbed of dinner money and being rejected by girls). As far as the game is concerned (and leaving my private life out of it), the type of school you choose determines your eventual skills.



[4] After school comes college and all the excitement of stimulating intellectual challenges, long-term career plans and your first 'serious' relationships with the opposite sex (i.e. kissing with tongues). This is also where you determine your character's profession.





Conversations are as tricky to start as fights. You again have to first select the person you wish to speak to, then speak to him. Unfortunately by the time you've opened your select menu the NPC has usually moved off.



Top: **Each character has a different set of icons depending on his or her profession and the situation they find themselves in. Access by simply pulling down on the joystick and highlighting the name.**

ferent member of your party wants to hit someone they have to go through the whole process of 'selecting' all over again. If nothing else it encourages peaceful contact with whoever you meet.

IS IT ANY GOOD?

But surely, you ask, there must be something good to say about *Whale's Voyage*. No game is 100 per cent drop dead awful, is it? Well, the graphics are pretty good (especially involving your ship) and the character creation technique is, well, different (see Parenthood panel). Perhaps the most positive thing about *Whale's Voyage* is the way each character has a unique set of icons in any given situation. What the character can do changes depending on his profession, his skills and the situation in hand. It's a feature that's only marred by the awkwardness of the control system itself.

Apart from that, no. I can find precious little else to recommend about *Whale's Voyage*. There's hardly anything in the way of excitement or atmosphere, nothing of what you would call addictiveness and it certainly doesn't inspire confidence in the Austrian games market. What it does do is present a damn strong argument in favour of waiting for *Elite 2* to come along.

TRULY INDIFFERENT

It is hard, truly hard, to convey how much indifference *Whale's Voyage* invokes in me. I have not the inclination to persevere with it nor the desire to see what lies ahead. I have no real reason to loathe the thing, but there is nothing about it



One of the other things to do in orbit (providing you have enough money) is to equip your ship with all sorts of additional extras. Weapons, shields, cloaking devices etc.

worth praising. It's like a big league football manager seeing a young lad kicking a ball around in the park and thinking 'That kid reminds me a bit of a young George Best. Maybe he's got talent', only to sign him up for the clash against BigTown United and watch him stand around at the back doing nothing. It's really got nothing going for it and I can't help but feel sorry for it. Or at least I would if it could make me bothered about it, which it can't. CU

A TRADE-OFF

The buying and selling of goods (what we professionals call 'trading') plays a major part in the game (more major than you hopefully will). As with *Elite* you can buy and sell your wares while in orbit of the planet, but for the best prices it's usually better to trek down to the planet and talk to the dealers there.

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RELEASE DATE:	NOW
GENRE:	RPG/STRATEGY
TEAM:	NEO SOFTWARE
CONTROLS:	M/J/K
NUMBER OF DISKS:	6
NUMBER OF PLAYERS:	1
HARD DISK INSTALLABLE:	YES
MEMORY:	1Mb

GRAPHICS	70%
SOUND	50%
LASTABILITY	45%
PLAYABILITY	40%

"A sub-standard space sim. Roll on Elite 2... quickly!"

OVERALL 45%

ISHAR 1200

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The first party member to recruit is this thief. This guy's called Bormina – you know Tolkein has a lot to answer for with his stupidly named characters like Bilbo Baggins and Aragorn. What's wrong with simple names like Fred and Steve?

The archipelago of Arborea has featured in a fair few RPGs in recent years. First there was the *Crystals of Arborea*, then *Ishar – Legend of the Fortress* and, last month, *Ishar 2 – Messengers of Doom*. All the games have been well received by both public and critics alike. So it was with some disappointment that many adventure fans found that *Ishar 1* did not run on their A1200s.

Fortunately that grave oversight has been corrected and A1200 owners can finally experience the delights of one of the best RPGs on the scene. Not only is it now fully compatible it has also been significantly enhanced.



Unfortunately the town's not as peaceful as it first appears. Here's a band or roving orcs out to make pancakes of your adventurers. One of 'em's dead but it cost the life of poor old Bormina (still, with a silly name like that he didn't deserve to live very long).

The player sees the world from the standard first person perspective but, beyond that, the game does not conform to the usual tenets of the genre.

First off there's no character generation to deal with – you start the game already equipped with one fighter who must then travel the lands recruiting other party members. This is one of the more intriguing aspects because you can often find yourself in a position where you desperately want to recruit someone whom the rest of the party will not have. In this respect a character's personality greatly affects many aspects of the gameplay. You can even find yourself in a position where a wounded character, who is disliked by the rest of the team, is refused medical aid.

The idea of the game is to explore a vast world in an attempt to find clues that will help you defeat the nasty Krogh.

This evildoer has built a huge temple in your lands and is doing his utmost to terrorise and kill the local population. The sheer size of the map is probably the greatest problem that exists with this game in that the landscape is often very sparse with few locations for you to explore.

Still, if you like mapping you're definitely in for a treat. Improvements to the A1200 version include the obvious expansion in colours to 256 which adds significant depth to the backgrounds. Also, the gameplay has been tweaked to take advantage of the faster processor. This is quite welcome given the older version's tendency to run fairly slowly.

The most welcome improvement in this version of the game comes in the form of a doleful soundtrack – great for atmosphere. All in all it's a substantial improvement serving to enhance your overall enjoyment of the product.

83%

Jon Sloan

A1200 SPECIFIC

SIM LIFE AGA

MINDSCAPE OUT NOW £34.99

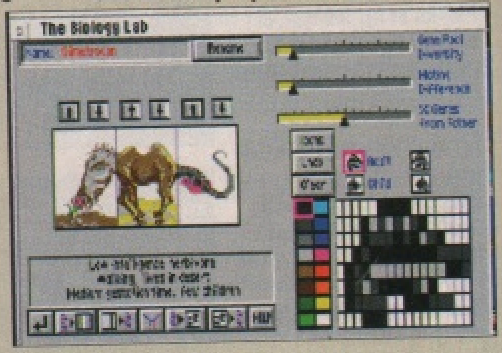


The speciate window is excellent. Say you make a mistake with one animal you can change it into another, either immediately or over a few generations.

At first view *Sim Life* looks like one of those incredibly complex utilities that takes you ages to learn to use properly before you realise that you don't actually like it. Fortunately that's only half true – it will take ages before you learn what all the buttons are for, but it's great fun experimenting. And that is the core of the game, as the designer Ken Karakotsios says, 'It is a game, a toy and an experimental tool to learn about life, real and artificial.'

It's absolutely necessary in such a deep game for you to be slowly introduced to it via growing levels of complexity. Thankfully, Ken has realised this and provides you with a full on-screen tutorial. Also, as it was ported straight from the Apple Mac the control system is very intuitive indeed. So, despite the fact that *Sim Life*'s got more buttons than all the bellies in China you soon learn what all the major ones do. To help you start there's also six pre-set scenarios or experiments ready for you to explore. One of the fun ones starts you off with a colony of herbivores which then suffers from a gradual introduction of carnivores. The aim being to try to find out at what point a balance is reached.

There is no specific goal to be reached. The basic idea is to establish an ecosystem where the various lifeforms reach some kind of equilibrium with each other and their environment. You can achieve this by changing factors at every level of the life scale from basic genes all the way up to whole species of both plants and animals. Also, instead of taking such immediate control over evolution, you can influence it less directly by altering the environment making it hotter, wetter, less lush, etc. This range of options makes *Sim Life* a game you're likely to be playing for months, maybe even years, down the line and still finding something new to do.



The biology lab window allows you to create or edit lifeforms. Just like God! At this level you control their gene diversity, their main food source, and their intelligence amongst others.

On the down side, I was less than impressed by the standard of the graphics with animals being depicted as simple block drawings that move but do not animate. The game speed too is not good, even on the A4000. Those little niggles aside, if the idea of being able to control a whole ecosystem and the evolution of all the life in it appeals to you, *Sim Life* will draw you in and keep you playing for a long time to come. Now, what if I cross an alligator with a poodle...?

85%

Jon Sloan

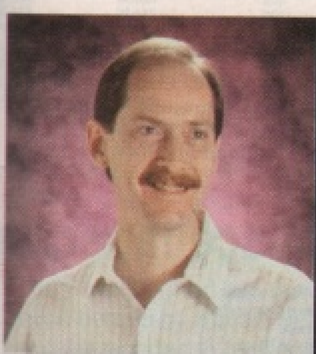
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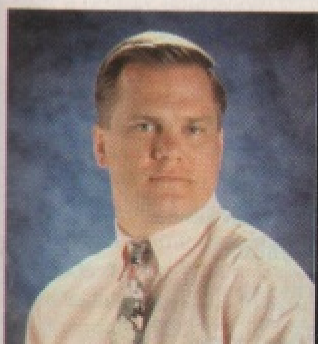
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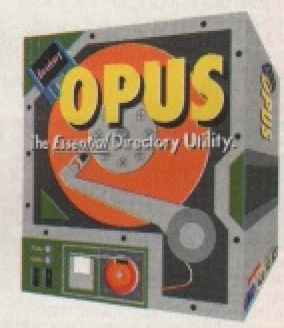
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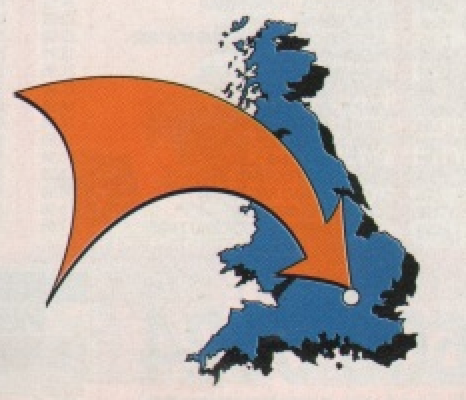
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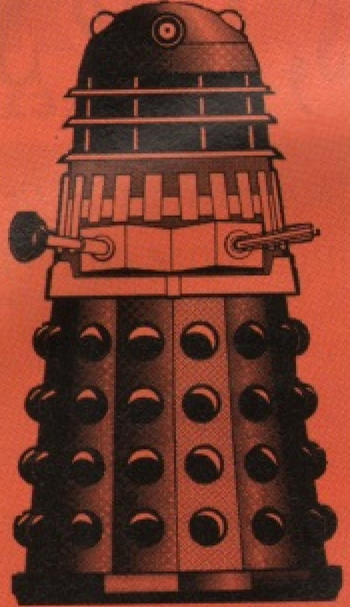
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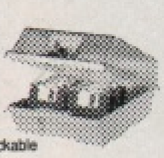
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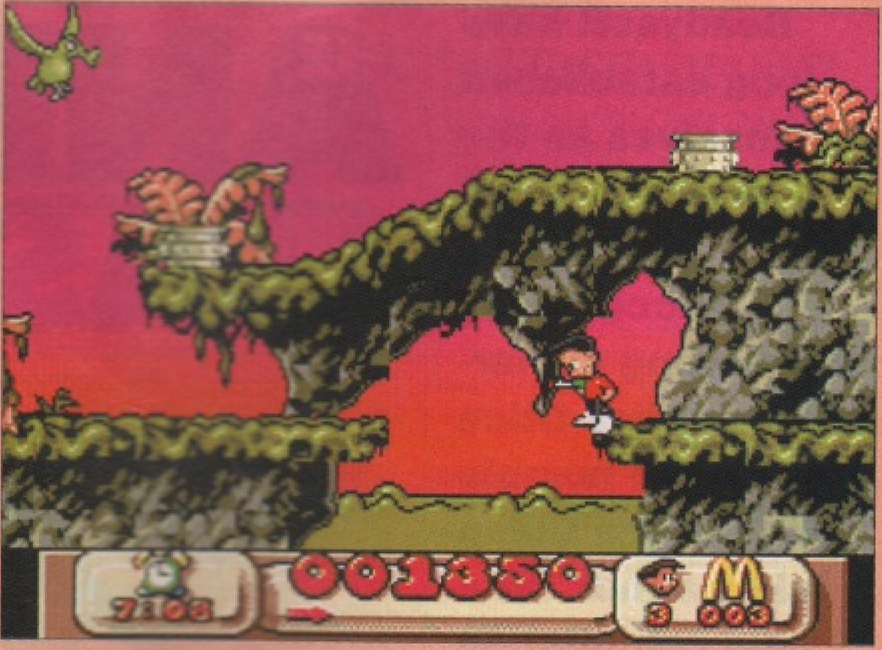
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GLOBAL GLADIATORS



As his desk is an avalanche of empty coke cans, books and dirty laundry, we thought John Mather was the best candidate to review Virgin's new dirt-busting environment conscious blockbuster.



Mick, or is it Mack, contemplates throwing his pixelated life away while a bog-bird swoops in.

Virgin's first attempt at exploiting the McDonald's license – the thoroughly miserable *McDonaldsland* – was such a stinker we didn't even bother reviewing it. Happily, their second stab at the license is a much more playable affair.

Global Gladiators once again features the exploits of Mick and Mack. This time, the two pals are tucking into a meal at a McDonald's restaurant, reading the latest *Global Gladiators* comic, when they're suddenly transformed into the comic book heroes by Ronald McDonald and transported to McDonald's Land which has been taken over by some evil slime-monsters who are spewing out a deadly tidal wave of gunge.

To save the day, Mick or Mack must run or jump about the game's four worlds, made up of three levels apiece, destroying the alien invaders and thus preventing them from turning the world into one big toxic waste dump. Each character comes equipped with a Gooshooter, a marvellous device which churns out an endless supply of a gunge-destroying substance making short work of any alien nasties that get in the way.

Each world is built around a particular theme. Slime World is full of globular-shaped nasties which wibble and wobble all over the place, spewing out a torrent of green slime at anyone who comes near. The platform-packed scenery is made up of grassy hills and outcropping cliffs with deadly gunge-filled pits lying in wait if you lose your footing. The Mystical Forest levels throw up their own set of nasties in the form of wood-chucking beavers, man-eating plants and murderous axes that literaly fly off the handle at the slightest provacation. The most testing obstacle are the bees' nests – once shot to pieces, they unleash a swarm of bees which follow you around.



Further on, Toxi-Town features a series of interconnected steel girders, moving conveyor belts, lifts and other obstacles. On the prowl are pneumatic drills, mutant trash cans that throw out a deadly diet of broken bottles and other such rubbish, and toxic clouds that split into smaller particles once hit. Finally, Arctic World is set atop a series of snow-capped mountains and glaciers, and features some cute snowball-chucking Yetis as well as polar bears and snowstorms.



LITTER LOUTS

As well as destroying the littering louts that infest each level, there are also a number of McDonald's Arches to pick up. Once you've collected 40, Ronald McDonald appears to wave you through to the next stage of the game. Pick up another 30, though, and you gain entry to a special bonus level. This involves collecting various bottles, cans and newspapers as they fall to the ground and depositing them in the correct recycling bins for bonus points galore.

Mick and Mack possess an amazing repertoire of facial contortions and, if left to their own devices too long, they'll blow a bubble with some chewing gum, spin their Gooshooter around in their hand, or a zillion other set pieces.

Even better, though, is the mass of sampled speech and sound effects that have been included. Collect an energy-giving heart and you get an 'Awesome, dude' greeting blaring out of the speakers, with similar phrases littering other parts of the gameplay.

STAND AND DELIVER

Unfortunately, the game fails to deliver in a number of departments. For starters, it's only a one-player game, so you can play either Mick or Mack but not both together. More importantly, the whole shooting match is too easy. It's possible to romp through the first two worlds in a couple of hours, and I reckon that most CU AMIGA readers could complete the entire game within a day if they put their minds to it. It's rather like buying a Porsche and finding that its equipped with a Mini's engine. *Global*'s graphics are certainly stunning, but the gameplay isn't in the same league. There's also a problem when Mick or Mack's sprite is flipped over – the on-screen view changes to show the area directly ahead of the sprite, so things can become confusing if you have to quickly change directions a number of times.

That's not to say *Global Gladiators* is a bad game. If you're new to platform games, you'll get a kick out of it, but the more experienced players amongst you should look elsewhere. CU

Snowball fights have never been so deadly as those you'll face in Arctic World.



Touch the spikes or fall into the gunge pits and you automatically lose a life.



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RELEASE DATE:	OUT NOW
GENRE:	RUN 'N' JUMP
TEAM:	IN HOUSE
CONTROLS:	JOYSTICK
NUMBER OF DISKS:	2
NUMBER OF PLAYERS:	1
HARD DISK INSTALLABLE:	NO
MEMORY:	1MB

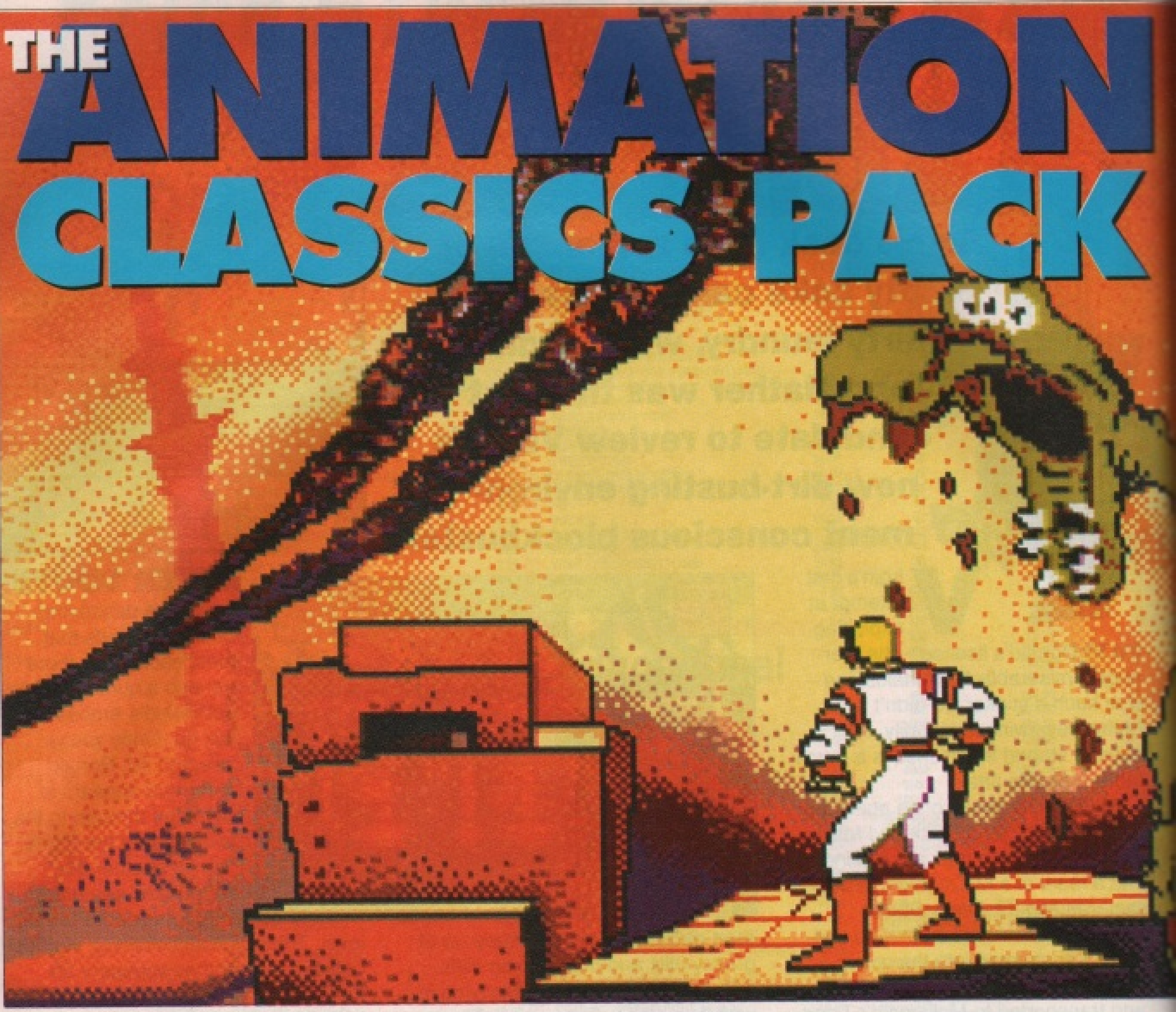
GRAPHICS	95%
SOUND	90%
LASTABILITY	50%
PLAYABILITY	86%

Certainly looks the business, but the gameplay's too easy.

OVERALL 75%

THE ANIMATION CLASSICS PACK

Readysoft have long established themselves as the premier Amiga animators, successfully converting numerous laserdisc titles to the humble A500. Tony Dillon takes a look at a new compilation that collects three classic games.



Right: ***Space Ace*** **takes out the huge green scaly thing! William Gibson never mentioned these!**

When *Dragon's Lair* appeared in the arcades, everyone oohed and aahed over the cartoon antics of Dirk the Daring. Fifty pence pieces were dutifully shoved in the stunning looking cabinet without a break, before people finally realised that it just wasn't a very good game. Sure, the graphics being played straight from an oversized Compact Disc were staggering, but the game was almost totally devoid of playability. The problem was that it played like a speeded up adventure game – rather than control the actions of the on-screen hero, you chose the reactions to what was happening. If you thought Dirk should leap left from his current position to avoid the swinging axe, then you pressed left on the joystick – not at the time he should jump, but in any of the five seconds leading up to it. In a sense, you could 'program' the moves for an animation sequence, and then step back and watch it unfold.



Dirk the Daring, ready for anything. What a hunk!

DRAGON'S LAIR 2 - TIMEWARP

The original *Dragon's Lair*, when released on the Amiga, wowed everyone in much the same way as the arcade game. Strangely enough, many people didn't mind shelling out the £45 for the game, nor the inherent lack of playability. It looks like people were happy just to have the stunning animation and graphics, which goes some way to explaining why *Dragon's Lair 2* is no better than the original.

It isn't so much a sequel, more a continuation. *Dragon's Lair*, the arcade game, was huge – so large in fact that the Amiga conversion only held one half of it, even though it came on six disks. This is the second half of that game, and it can only be described as more of the same. It contains the same unconventional graphics and controls, which is a good or a bad thing depending on your point of view.



If you wonder what I mean by 'unconventional graphics', then I'll tell you. Most games have a single graphic for the main character, something instantly recognisable regardless of surroundings. This game works more along the lines of a cartoon, with the camera view and zoom changing for each six-second scene, of which there are 46. Starting in the kitchen of your beloved mother-in-law, you have to flee and rescue the gorgeous, pouting Daphne who has been kidnapped again.

The sound and graphics are amazing. All sounds have been digitised from the coin-op, and all graphics mimic the arcade ones perfectly. Oddly enough, the whole thing runs on a half Meg machine, though lord knows how!

Sadly, the controls are the same as before. There is no room for error, and as you need to make between one and three joystick moves per scene, one wrong move sees you losing one of your three lives. A word of warning: this game features no skill whatsoever. The entire thing can be played through with trial and error, trying each joystick direction as you come across another trouble spot, until you get the right one. Remember the moves you make, and you can waltz through the game!



Top Right: **What a way to die! Dirk gets pulled apart on the drawbridge.**
Right: **Dirk's mother-in-law comes at him with a rolling pin. Could she be the dragon of the title?**



Whoops! Looks like *Space Ace* should have watched his step here!



Ducking and diving, but not in the Arthur Daley sense. Ace jumps laser bolts like a party piece!



SPACE ACE

Another Don Bluth arcade machine, *Space Ace* featured more staggering graphics and little playability. This time we move away from the mediaeval feel of the previous two games and set off into space. Ace's girlfriend has been kidnapped again(!!), and guess who has to face all sorts of unimaginable dangers to reach her?

Again the graphics and sound are impeccable. The soundtrack runs constantly through the game, thanks to a clever loading technique that loads while you play, not unlike the system employed by Storm in *Silkworm* and *SWIV*.

Speech, laser bolts, screams of pain and all the usual explosions run throughout, giving the whole game the atmosphere I felt was missing from the *Dragon's Lair* games.

The biggest difference is the playability. This is a lot harder than either of the *Dragon's Lair* titles in that joystick moves have to be timed to what's on screen. Now, instead of programming in the steps at the start of the action, you have to wait until the critical point and then move. Unfortunately, the critical point comes and goes very quickly, and more often than not you'll miss it and die.

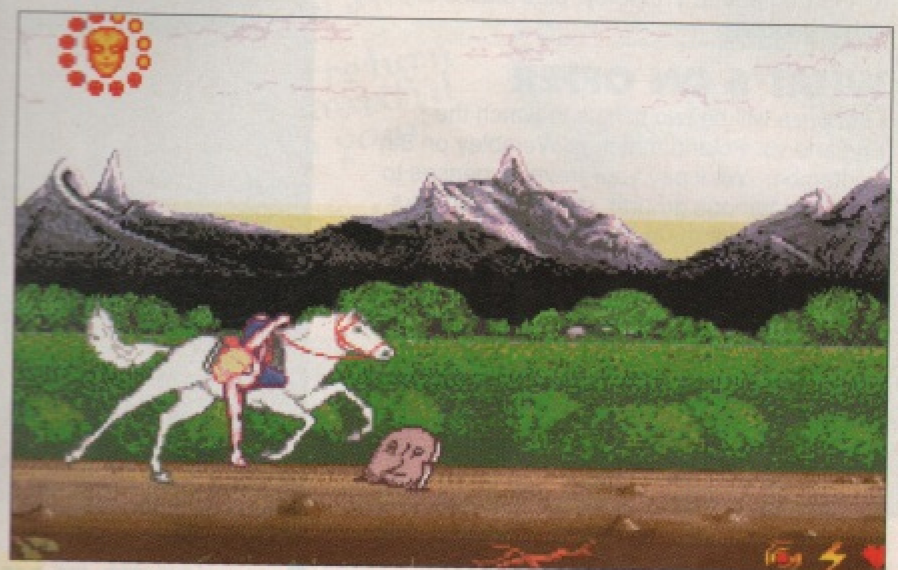
That, plus the fact that the scenes are longer now, some requiring as many as six different joystick movements, means that this is a game you'll keep at for ages. Or not, if the frustration factor has anything to do with it.

Make one mistake, and you're dead. Die three times, and it's back to the start of the game. As with the previous games, each 'puzzle' is sorted out more through trial and error than anything else, and when you keep dying at the same point because either (a) you've moved the joystick in the wrong quarter of a second, or (b) you've moved it at the right time but in the wrong direction, it's enough to make you smash up the disks, tear up the manual, put on some soothing music and watch some flowers for a bit. Nice graphics, shame about the game.

WRATH OF THE DEMON

After doing the laserdisc conversions, which all received similar criticisms concerning gameplay, Readysoft decided to create a game from scratch that still displayed their seemingly limitless graphical expertise as well as showing how playable their games can be. If *Wrath Of The Demon* is anything to go by, then Readysoft just can't create playable games.

This one's a multi-stage scrolling beat 'em up, where you have to find a demon who has placed a plague on a small village, and destroy him.



Riding high in *Wrath Of The Demon*. Watch out for those rocks!



There are still elements of Bluth-style humour in *Wrath*. All that dragon needs is some Doc Martins!



The underground caverns in *Wrath* are unbelievably unplayable. Just try turning around!

Your journey takes you through some unfriendly countryside on horseback, through some even less friendly caverns, and on towards the demon. Hit and stab things as you travel along, collect potions to increase your energy and give you special weapons and fight the big guys at the end of each level – it's all standard stuff.

This time around, though, you will find that the graphics are original, rather than converted from any coin-ops, and they really don't come up to the mark, especially when compared to, say, *Myth* or *Lionheart*, let alone the other games included in this package.

The parallax scrolling is all very nice, but unfortunately the sprites aren't attached to it correctly. The backdrops move very quickly, whether you're running or riding, which is certainly a good thing. Sadly, the sprites move very slowly.

Each action just takes too long to perform to be playable. If you are walking to the right, and something walks along behind you to attack, by the time you've managed to turn around to hit it, it's hit you instead and run past you. Infuriating, to say the least.

The collision detection in this game is abysmal. You can hit enemy sprites a dozen pixels out of reach, and they can do the same to you. These are not little details that can be ignored. This sort of thing really spoils the playability, and in the process renders this game completely useless.

CONCLUSION

The package is called *Animation Classics*, and as such it stands up very well. There are examples of the best Amiga animation around in here – games like *Dragon's Lair* will always look impressive. It's just a shame that there's so little gameplay.

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RELEASE DATE:	OUT NOW
GENRE:	COMPILATION
TEAM:	READYSOFT
CONTROLS:	JOYSTICK
NUMBER OF DISKS:	14
NUMBER OF PLAYERS:	1
HARD DISK INSTALLABLE:	NO
MEMORY:	0.5 Mb

GRAPHICS	90%
SOUND	89%
LASTABILITY	41%
PLAYABILITY	32%

"A collection of superb looking games, but almost completely devoid of gameplay."

OVERALL 43%

HAVE YOU GOT WHAT IT TAKES?

So, you think you're a good gamesplayer, eh? Well, we're going to put it to the test! We've teamed up with Virgin, and nationwide games store, GAME, and come up with the ultimate games challenge. Over the next couple of months, each GAME store will be running a series of challenge matches using a specially prepared demo version of Dino Dini's Superstar-rated kickabout, *Goal!*. The aim of the competition is to rack up the highest score and reach the regional finals, before taking part in a Grand Final and walking off with a pair of tickets to see England at Wembley, plus stacks of Virgin goodies.

WHAT'S ON OFFER

First prize will be two tickets to watch the England vs. Poland match at Wembley on 8th September. We'll pay your travel expenses to the world famous ground, ply you with drinks before and after the match, lay on a four course meal, and plonk you in a plush executive box from which to watch the match. We'll even lend you a telly just in case you get bored with England's miserable performance and want to watch Coronation Street instead. There will also be an extra bonus of a couple of tickets to a football fixture of your choice (within the UK and subject to ticket availability).

Plus, the GAME staff will be giving away gift vouchers and a limited number of Adidas football shirts on the day of each competition.

HOW TO TAKE PART

To enter this completely excellent competition, simply check out the list elsewhere on this page to find out where your nearest GAME store is located. Then clip out the coupon at the bottom of the page, turn up on one of the specified dates, hand your entry form to the special *Goal!* representative and get set for some serious joystick waggling.

WHEN TO PLAY

If you want to take part, we've fixed up a number of dates for the competition. These begin on Thursday 22nd July, and continue on Thursday 29th July, Thursday August 12th, Thursday August 19th and Saturday 21st August for the regional heat winners. The Grand Final takes place on Saturday 4th September at GAME's prestigious Manchester-based headquarters, when winners from each regional heat will compete for the title of *Goal!* Supremo.

RULES
1. Employees of GAME, Virgin and CU AMIGA are not allowed to take part.
2. The Judges' decision is final and no correspondence will be entered into.
3. There will be no cash alternative.



WHERE TO PLAY

Game Stores are everywhere, and cover the length and breadth of the country. Check out the list printed below, take along this copy of CU AMIGA to your nearest one, and you'll be able to enter the completely fabulous *Goal!* compo.

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PROJECT-X

ENHANCED VERSION

TEAM 17 OUT NOW £12.99



Quality is a nebulous concept. What's one man's meat is another's poison. And nowhere is this more true than in the prodigious world of Amiga shoot 'em ups. Everyone's got an opinion concerning which game is the ultimate blast. My favourite is Team 17's *Project-X*, a silky smooth blast with arcade quality graphics and electrifying gameplay. Once you've picked this up, you'll never want to put it down.

Unfortunately, the original version was also quite hard, and some people found it almost impossible to get very far without getting totalled. Admittedly, I've never managed to get past level four, but that certainly hasn't kept me from trying. The lack of a cheat was a bit of an oversight (until CU provided one on its December '92 coverdisk!), but the game did provide a tremendous challenge for those willing to invest the time and effort. I should know, I'm still playing it even now!



No, it's not an end-of-level BOSS, just one of the huge enemy sprites in the game.

To help out those who couldn't even complete the first level, Team 17 have tweaked the gameplay to make things slightly easier. Unlike the *Alien Breed Special Edition*, though, Team 17 haven't added any extra levels or included any new aliens to slaughter – they've merely listened to some criticisms of the gameplay.

Sadly, they've gone too far the other way, and things are now too easy. Without losing a life, I managed to reach the start of the third level and didn't even break out into a sweat. In this new version, you begin the game bristling with weapons, making the first few attack waves crumble beneath your overwhelming firepower. As you acquire more power-ups, things become skewed in your favour. Instead of losing 25 per cent of your weapons when a ship gets destroyed, you only lose one level of power-up, so you're soon back to where you started after you've scooped up the next power capsule.



Don't stand still for too long with this critter on your back. Keep moving, keep firing.

And that's it. There's nothing else that's new with this version of the game except that it comes on three disks instead of four. Oh, and the fact that it now costs half as much as the original at a bargain-busting £12.99.

Dan Slingsby

89%

NOVICES START HERE

If you've never heard of *Project-X* before, hold on to your hats, as here's a whistle-stop guide to its essential features. For starters, it's a shoot em up, pure and simple. Aim your on-screen craft in the right direction, stab the fire button, and blast all and sundry into so much intergalactic space dust. Of course, as in any self-respecting game from the genre, there are power-ups aplenty and it's possible to bestow your craft with all manner of weapons such as plasma bolts, sideshots, heat-seeking missiles, lasers and a nifty stealth facility to render your craft virtually indestructible for a certain length of time. Up against you are ranged a deadly collection of bio-mechanical beasts, the results of a series of failed scientific experiments. These evil creations, dumped on the planet Ryxx, now pose a threat to the rest of the galaxy. Your job as intergalactic flyboy is to power down to the planet's surface and blow the whole shooting match sky high. Set over five levels, and featuring some of the best graphics ever seen in an Amiga game, the action comes thick and fast and you need all your reflexes to stay alive.

CAMPAIGN

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The inspiring battle map. From here you can plan strategies and keep tabs on your tanks.

Coming from Empire, you would expect any World War II sim to deal heavily in tanks, as indeed *Campaign* does. In fact, the only halfway interesting part of the game is the simulated tank battles where you can control any of the vehicles involved, from thin skinned scout cars right up to a well armoured Sherman, or the Prize of the Wehrmacht, the Tiger.



The tank simulation is good fun and probably covers more different types of vehicle than any other tank sim.

The strategy element is fairly haphazard. You can control the movements of your tanks, the production of factories and the deployment of any active aircraft. This is all done via the mouse on a fairly decent scale battle map.



The strategic overview of the Battle for Berlin II, the sequel.

This is fair enough if you can be pixel accurate with the mouse, and you can do it in real time as the game unfolds.

This disk hopes to develop the strategy side of the game more. There are 25 new scenarios based on famous campaigns. The battle orders, geography and starting positions are all fairly accurate, but your campaign is unlikely to proceed in the same way that the original did.

The orders given to troops are just never accurate enough and the logistics is a nightmare – tanks can be stranded in perpetuity through lack of fuel because all the gas has been delivered to the pixel next door.

Since it is possible to create your own scenarios in *Campaign*, the worth of this disk is questionable. The scenarios themselves are well thought out, but can only be as good as the original *Campaign*. Since the only decent part of the game is controlling the tank forces as they clash, and since it doesn't really matter, for the purposes of the simulation, whether they are fighting in Berlin or Basingstoke, I would suggest that scenario disks for *Campaign*, however good, are a waste of time. You'll also need the original program to run the data disk.

Nick Veitch

33%

THE PATRICIAN

A life on the ocean waves, buying low, selling high and climbing the ranks to power. It's all in a day's work for Tony Dillon.

CU AMIGA SCREEN STAR

The Patrician has to be the Europe-wide surprise hit of 1993. This game has dominated the German charts for longer than anyone can remember, and judging by the response Daze Marketing have received after last month's exclusive playable demo, it's set to repeat that same success in the UK. Who would have thought that a strategic trading game would have done so well?



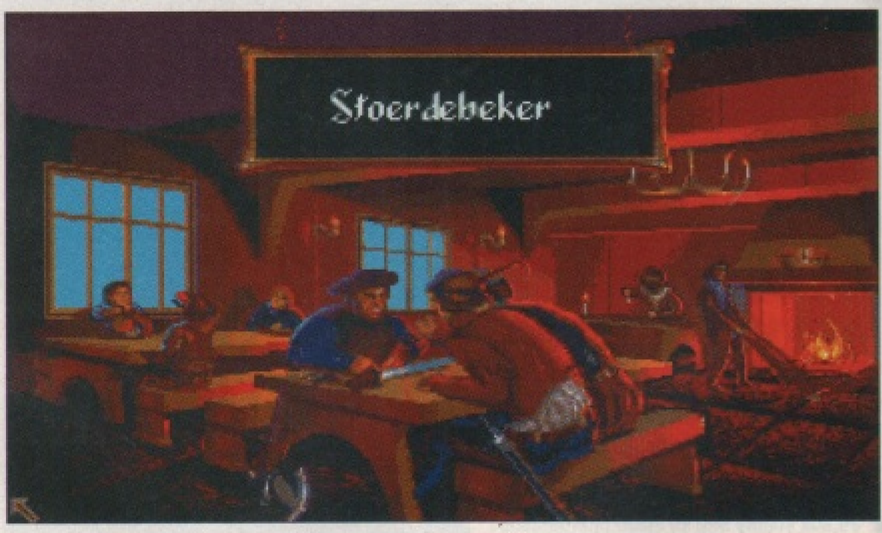
Your office in your home town. The map on the wall is used for plotting your next route, and the large book contains all the stock prices. What more could you want!

LECTURE TIME

Just in case you aren't familiar with this particular phase of history, *The Patrician* is set at a time of great change in Europe. The Renaissance is on its way, and all over this great continent traders are calling for some kind of agreement – a union almost – to ensure the safety and livelihood of those who carry cargo from port to port. It's at times such as this that great ideas are born, and in this period the Hanseatic league was created. In essence it worked as the predecessor to the European community. Mayors from the main towns would oversee the running of their ports and would answer in turn to the Alderman of the league, otherwise known as The Patrician.

If you didn't play the demo, you might be wondering what your role in all of this is. In short, you are a simple trader with designs on fame and fortune – well, fortune anyway. Starting the game with a single boat and 200 Thaler to your name, you have to complete a number of tasks. Firstly, you have to become incredibly wealthy through shrewd and cunning dealing. Secondly, you need to get married. Thirdly, you must rise in public opinion to the point where you are elected Mayor of your home town. Finally you must rise even further and become The Patrician him/herself. And once you've reached the top, you'll probably find that it isn't too easy to stay there.

The first thing you'll need to come to grips with, however, is money. Thaler, the currency of the league, isn't the easiest thing to get your hands on. The safest way to get it is to trade, and with around 40 commodities to barter with, some solid logic is needed. The position of the port and the time of year both play strong parts in the pricing of goods. Corn in summertime is plentiful in most ports, and therefore very cheap indeed. So, buying a large amount, and then waiting until winter, when supplies are low, will guarantee you a good return on your investment. People will always pay high prices for spices and pepper, so when the spice ship arrives, you'd better get down to its port of call as quick as you can. Get there first and you're guaranteed a small fortune.



This might look like a rowdy bunch to some people, but in fact these will all work on your boat for a little as 1 Thaler a month.



Hamburg at sundown, and what a lovely city it is. For the sake of simplicity, all cities in the game look like this, so the buildings are always in the same position.

SPARE SOME CHANGE?

What if you can't get the money together to make the investment? Then it's time to borrow. At the time,

ACTION STATIONS!

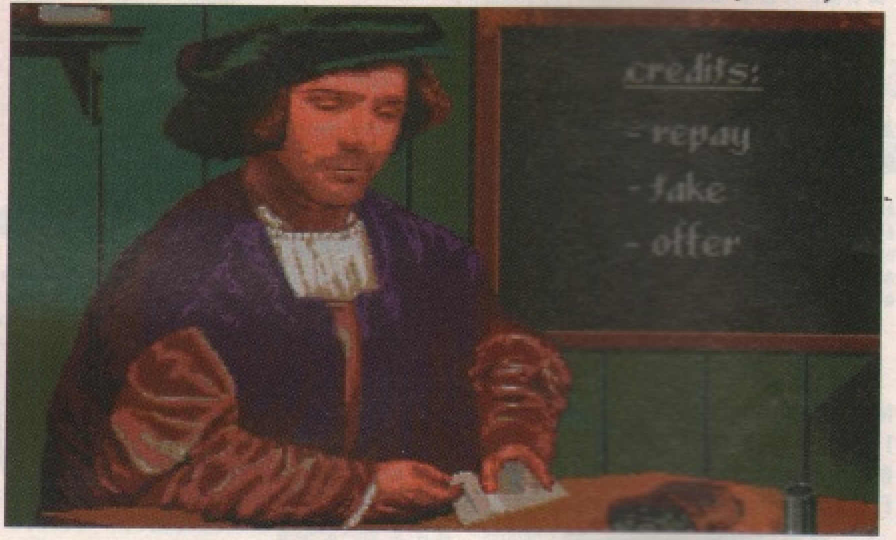
It's not all thinking, you know. Pirates were rife at the time, and that's not too surprising when you consider how much cargo was passing between the towns. As a result, one of the first things you'll need to spend money on are some decent arms for your ship. After all, you never know when a pirate is likely to strike, but when they do, it's bloody. What you have is a full arcade sequence, controlled by the mouse, in which you have to load, aim and fire cannons at the approaching ship before they can do the same to you. Thankfully it doesn't happen too often. You can switch off the arcade sequences and leave the end result for the computer to work out, but it can be a nice break from all that thinking!



The market square, and this is where you find out how popular you really are. If people don't know you, then why not throw a feast?

I DO

It might seem like a small thing, but marriage is something taken very seriously by the people of Europe. Basically, there's no way that they will elect a mayor who has never married, so one of the things you should keep a constant look out for is a companion for life. The way to find one is, when the time feels right for you, to hire the services of a marriage broker. Generally they will offer you two types of partner. The first will always be a Marilyn Monroe/Clark Gable look-alike, with little money but bags of appeal. Or, you can wait for an aging widow with pots of cash and little life left. Which should you choose? I don't know, just how mercenary are you feeling?



You want the friendly, listening and ready to help you bank? You've come to the wrong door. This is money with menaces.

though, the banks were run by the church, and borrowing money was seen to be a great sin.

So, the only way that you can possibly borrow any cash is to seek a private investor who, at the start anyway, will only offer you small amounts of money over very short periods of time and at over 40 per cent interest. Don't worry, though. Things do get better.

This is the part of the game where you begin to learn about power. There are two types to wield, and to get anywhere in this game you'll need to have both. There's political power and there's people power.

People power is that small factor that counts the number of people who will vote for you in elections. Gain the trust of the people, and you can start to attain political power. Once you have both, things get a little easier for a while. For a start, wealthier businessmen will want to deal with you, offering you larger and larger sums of money, over much longer periods for much less interest. Now you'll begin to see how the whole game intertwines with itself to create one of the most realistic and thought provoking strategy titles yet seen on the Amiga.

ILLEGAL MOVES

Of course, all that power does have its downside and, like I said, borrowing money is illegal. So is bribing a council official to give you a leg up the ladder, or leak important information to you. In fact, this game lets you do a hell of a lot that isn't actually allowed. This is purely to drop you in it later in the game. Picture the scene. There you are, Mayor of your own town and adored by your citizens. All of a sudden you receive a letter from a trader who has never reached your lofty heights, threatening to expose all concerning you and certain borrowings that happened early on in your career unless you pay a lump sum each month into a Swiss bank account. Do you try to call their bluff, or do you pay? The tension ups yet another notch.

TOP DESIGN

You can no doubt already tell what a superbly designed game this is, and so it should be after 18 months of hard work. What's really nice is that the same attention to detail and perfection has been carried over into the presentation. You can see from the screenshots on these pages what a gorgeous looking game it is, but they can't tell you how well it plays. Controlled entirely from the mouse, *The Patrician* uses a combination of static screens and control panels to handle everything from having a bath to borrowing beyond your means. If you want to go to your office from the town square, you click on the window to enter. If you want to leave again, you click with the right mouse button.

And that's really all there is to it – there are no messy menus, no masses of key control. This is a game that leaves your concentration alone. You can focus on your next move without reading through the manual to find out which key to do it with.

A1200 VERSION

At the moment, *The Patrician* is compatible with all Amigas. In the near future, however, an A1200 only version will appear with all the 256-colour images of the stunning looking PC version. The game will remain exactly the same in all other respects.

INVOLVEMENT

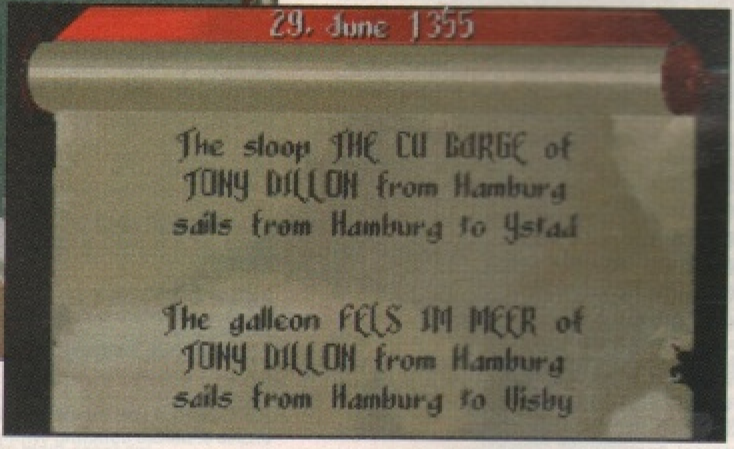
This has to be the single most involving strategy game since *Elite*. There's just so much to do that you could never play the same game twice, and the thrill of taking a gamble and seeing it pay off merits the purchase by itself. Unbelievably good stuff. CU



The town hall is the home to the Unions of the time, as well as a great place to sell or buy a boat or a warehouse.



The public baths is a great place to do business. Just slide into a tub next to a council official and start to offer him huge sums of money.



Once you have set sail, this scrolling, erm, scroll updates you on everything happening in the world.

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RELEASE DATE:	AUGUST
GENRE:	STRATEGY
TEAM:	ASCON
CONTROLS:	MOUSE
NUMBER OF DISKS:	3
NUMBER OF PLAYERS:	4
HARD DISK INSTALLABLE:	YES
MEMORY:	1Mb

GRAPHICS	92%
SOUND	81%
LASTABILITY	94%
PLAYABILITY	90%

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OVERALL 91%

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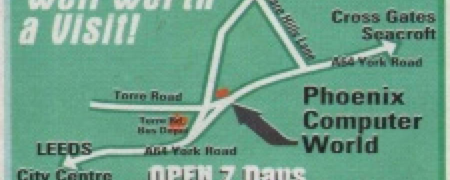
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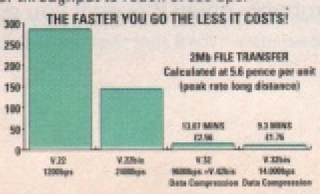
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THE IMMORTAL

HIT SQUAD OUT NOW £12.99

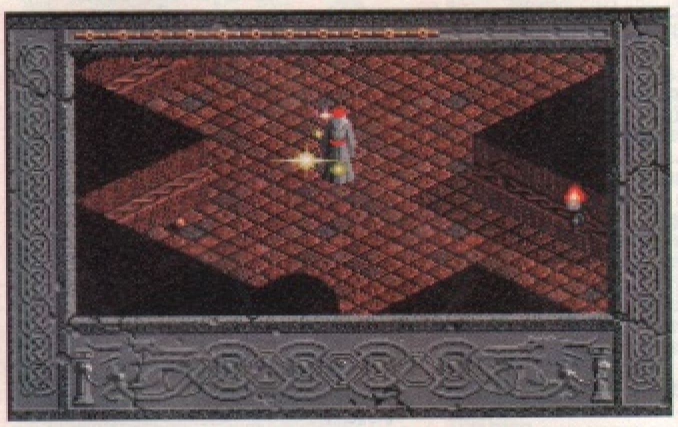
Way back in the mists of time, when this game first appeared as a full-price release, I almost gave up my ST so I could play this on an Amiga. Unfortunately I didn't, which is a damn shame 'cos I wouldn't have had to have waited until now to sample the rich delights of *The Immortal*.



Tread carefully in this dungeon as danger lurks around every corner.

The Immortal is an isometric RPG. The player takes the role of an unnamed wizard drawn to the dungeons of Erinoch after a plea for rescue sent in a dream by your old mentor, Mordamir. You progress through the depths by a little fighting, a little spell-casting, and a lot of problem solving. This dungeon is full of traps and monsters just waiting to catch the unwary off-guard and, as many are instantly fatal, it pays to be cautious.

The control system is fairly simple, with the joystick and spacebar controlling most things. However, combat does take a while to get used to, especially fine tuning your parrying skills; but then again who ever said that fighting seven foot tall Trolls was easy? Once you get used to the controls there's plenty of time to soak up the excellent graphics and eerie spot sound effects. From the simple sputtering of torch flames to the rich combat sequences every pore of the animations scream quality.



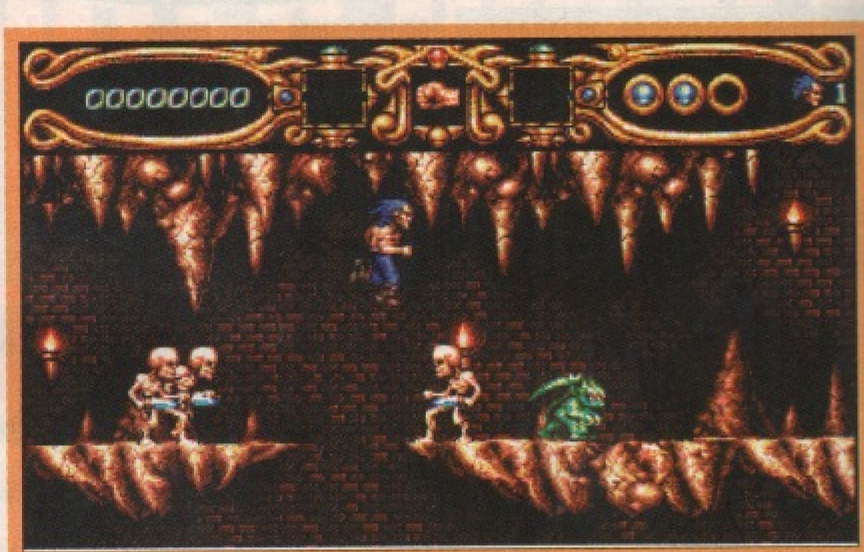
These flashing lights may look pretty... pretty dangerous. They're Will 'o the Wisps and can be utilised as a sort of missile attack.

But we've all seen games that look fantastic yet have little or no gameplay. Thankfully *The Immortal* does not fall into that league. There are puzzles galore to solve, most of which involve finding an appropriate object to throw, cast or twiddle at the right time.

However, it's here that the game's cracks begin to show. There are instances where you are immediately killed if you do not have those objects. Yes, I know that's what it would be like in 'real' life but this isn't, it's just a game. The frustrating aspect of this part of the gameplay is that you can only save the game once you've completed a level. So, if you reach the penultimate room on a level and are killed you'll have to play the whole of that section again repeating all the same moves you made before. That aside the graphics and general playability of the whole thing make *The Immortal* a game not to be missed. Hell, you'd probably enjoy it even if you don't normally like RPGs.

84%

Jon Sloan



Our hero does his Carl Lewis impression as he avoids a horde of marauding skeletons, only to jump into the arms of a loving gargoyle.

MYTH

KIXX OUT NOW £9.99

Taking its storyline from various myths and old wive's tales, *Myth* offers a halfway house between traditional hack and slash platformers and arcade adventures. In other words you run around various platforms hacking monsters and solving simple puzzles.

This mixed bag has been tried before fairly successfully – look at the Bitmaps' *Gods*, for instance. *Myth* follows roughly the same lines in that you play a muscle-bound adventurer carrying out some obscure quest or other to rid the world of demons.

These enemies range from basic skeletons to larger foes, such as the Medusa, a woman with snakes for hair and a deadly gaze that can turn you to stone. The standard baddies require little more than a punch or slash to kill them, but others require you to have a knowledge of legends if you're to figure out which weapon you'll need. Unfortunately some of the vital weapons are one shot only and as the bigger monsters require specific ones to kill them, further progress is impossible if you trigger a weapon at the wrong time.

Control of the main character leaves something to be desired. Although each weapon has several ways of implementing it, the reaction to your controls feels sluggish and slightly unresponsive. As for the sprites, they are detailed but lack the smooth animation necessary to make them convincing, this failure spoils otherwise fine graphics.

The sound is also unremarkable, although there is a nice tune on the title screen which fits in well with the atmosphere of the game, the effects within the game are not exactly mind-blowing. They're limited to simple punching and shooting sounds. The backgrounds vary from level to level, bringing a different atmosphere to each, ranging from dark and moody on the underground levels to bright and breezy on the island of the nymph.

Myth is both challenging and addictive and although the puzzles aren't much to speak of, they do give the game an extra something that lifts it up from being just another platform game. That is not to say that *Myth* is an exceptional game – in fact, there's nothing here that hasn't been done before, but what you are getting is a solid game for a reasonable price.

79%

Tom Alexander



At the end of the first level this guy will pop up from the depths of hell. Don't worry you don't have to fight him, but you do have to battle the thing in his hand.

MANCHESTER UNITED EUROPE

KRISALIS OUT NOW £9.99



Unfortunately I seem to have miscalculated as Bruges sweep down the wing for a concentrated attack from the corner. Oh, it's just like the real thing.

It's been two years since *Man Utd. Europe* was released at full-price and since that time we have seen the likes of *Sensible Soccer*, *Striker* and *Goal!*. How does *Man Utd. Europe* fare against these newcomers? Not terribly well I'm afraid – it looks somewhat dated to say the least.



In an unrivalled display of campness the players stand around the centre line doing their best Larry Grayson impressions.

The game uses a side-on view to convey the action, which is irritating when compared to *Sensible*'s much more practical top-down view. In fact, it's probably safe to say that this way of viewing footie action has been well and truly permanently relegated. The side perspective means that good passes are hard to perform and makes gameplay more difficult than it should be. This, combined with the fact that the ball sticks to the players' feet, makes *Man. Utd Europe* feel very dated indeed. Although there are plenty of different shots on offer, none of them seem to be really accessible at the time when you really need them. Overall, the control system is just not fluid enough and leaves you screaming obscenities at your Amiga and using that old 'It was the joystick, not me, honest' excuse.

Don't let this make you think that *Man Utd Europe* is total rubbish – there are some good options in there. You can play in a number of European cups and there is a wide selection of European teams available. You can even have four players playing simultaneously in pairs. This is quite a laugh, as by the end of the match the losing team will be arguing furiously about the general crapness of their team mate. The graphics are pretty good too, all the sprites are detailed and move in a fairly convincing way. There is also the usual spot-effects during play and quite a nice tune at the beginning.

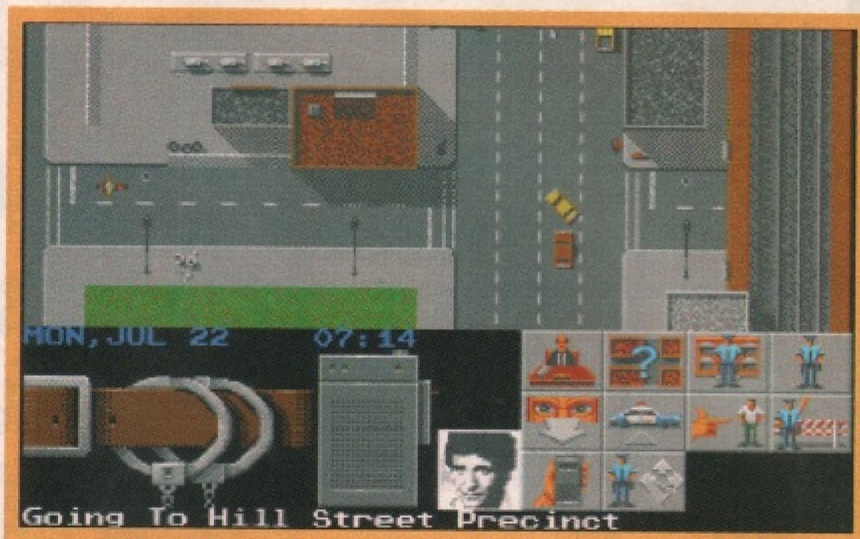
Although this is at a budget price, if you're looking for a good football sim, and haven't already got *Sensible Soccer*, *Striker* or *Goal!*, then you'd be well advised to save your money and buy any one of those. If you've got one already and are looking for something a bit different then *Man Utd. Europe* is worth a look, especially if you have three friends handy.

70%

Tom Alexander



They shoot, they miss! How come my goalie prefers to spend all his time flat on his back? Perhaps he's been taking lessons from Dan.



I hated this guy in the series – he always seemed to be picking the girls up. Revenge at last – I've confined him to the station house. No more girl getting antics for him.

HILL STREET BLUES

KRISALIS OUT NOW £9.99

Hill Street Blues is, fairly obviously, based upon the famous TV series of the same name, and sets out to simulate the running of an American Police precinct. But therein lies its problem – it emulates it rather too well.

You get to play Captain Furillo (he's the one that had an incredibly fit wife and they always seemed to end the TV show with them in bed together). As the Captain, not only are you in overall control of the station, but you're also in control of each of the officers. Now, this may seem great, having total control of the station, but unfortunately it's been so poorly implemented that the game just doesn't work. You have to tell your officers to do every single thing, right down to ordering them to get out of their car to walk to the scene of the crime. This means that you spend too much time doing the mundane things such as looking for the scene of the crime on a map or telling each officer to walk to their car, so when a crime actually happens you'll either have fallen asleep or have tried to make your officers walk under the nearest bus. I mean, forgive me if I'm wrong, but I always thought that cops had a modicum of intelligence. Then again...

The graphics are pretty minimalistic and the scrolling is almost unbearably slow. This makes an already flawed game annoyingly bad. It's a shame, because I feel that if the game design was just a bit more sensible and the graphics made smoother, then this could have been an enjoyable strategy game. As it stands it's just a lesson in tedious gameplay and a wasted licence.

Jon Sloan

41%



Returning to his office Captain Furillo pauses before selecting the personnel records. Aha, now I can find out just what that SWAT team leader was hiding. He always seemed a bit too macho to me.

»



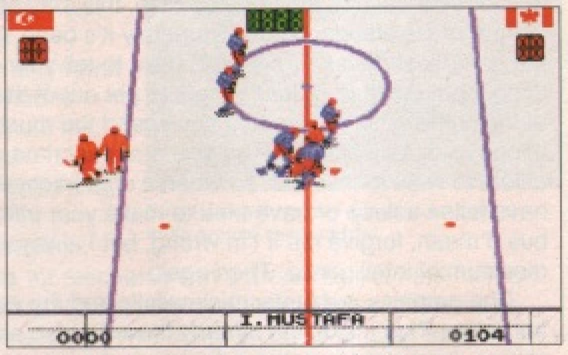
After many hours of blatant fouling, the Scot's team finally rises to the bait and a fight breaks out.

FACE OFF

KRISALIS OUT NOW £9.99

Have you had a chance to read the review of *Manchester Utd. Europe* yet? If not, go and read it now before you carry on with this one. There, done it? Good. Now, simply substitute ice hockey for football and you'd have an almost perfect description of *Face Off.*

Viewed from the same side-on perspective, *Face Off* is an ice hockey simulation without the blood and broken teeth. Call me an ultra-violent sadistic gun-fetishist (everyone else does), but the real pleasure for me in watching ice hockey only comes when one of the frequent punch-ups break out. Unfortunately, *Face Off* falls short of reality here. Admittedly, fights do occur but all you get to see is a still screen of two players pushing ineffectually at each other. Where's the blood? Where's the flying fists? What a let down.



Scrambling for domination on the centre line Canada and Turkey resort to some pretty fierce name calling. Try as I might I just couldn't get the Turks to engage in a little fisticuffs.

The rest of the game fails to live up to scratch too. The control system, though intuitive, feels very spongy and leaves you with a sense of frustration. The graphics are little better than poor and, as for the in-game sound effects, the less said about them the better. Which is probably what the programmers thought as they consist of little more than the odd grunt and crash.

To try to stretch out the pitiful gameplay there's a management option which allows you to train players, treat injured ones, etc. There's even the ability to give them a night out on the town before a match which actually helps them play well the next day. Personally, after a night out, I'm good for little more than sipping iced water... very slowly and very quietly!

If you absolutely love ice hockey then you may get some enjoyment out of this game. Alternatively I'd wait for EA's version on the same theme, due out later this year.

38%

Jon Sloan



Unfortunately, once it's started you don't get a little beat 'em up sub-game, just this still screen.



Once you've selected the air-to-air missiles a quick key press will target them on the nearest plane. Just a bit closer and you'll get missile lock long enough to fire a missile right up his tailpipe.

MIG 29 FULCRUM

HIT SQUAD OUT NOW £12.99

Flight sims are, perhaps, the most poorly represented of Amiga games genres. It's not that there aren't many to choose from, it's that there are so few that are any good. Unfortunately, this game isn't one of the few.

As usual the game comes with a fairly huge manual detailing every aspect of flying a supersonic jet fighter, including a section on tactics and air combat. Also as usual it's not until you've crashed and burnt two or three times that you actually take the time to read every page in it!

Once you've got a grasp of the controls, *MiG 29* is fairly easy to fly, perhaps the best analogy being that it is to planes what the Kalashnikov is to guns – easy to use, easy to maintain and very deadly! In fact it's quite novel to fly a plane that is usually flying against you in other flight sims. However, once that novelty has worn off the cracks in the game become all too obvious.

When it was first released *MiG 29* received great praise for its speed and smooth scrolling. But this came at a price – the almost complete obliteration of any ground detail. This is immediately obvious, but I was hoping that the lack of detail was just something that occurred on the practice missions. I had hoped that, once you set off to do some real attack runs, cities would scroll beneath you, mountain ranges would spring up on the horizon etc. No such luck.

MiG 29 suffers from all the faults so prevalent in most other Amiga flight sims – lack of detail, poor sound, lack of realism – only more so. Don't get me wrong, there's nothing I like better than donning a flying suit, leather boots and goggles and going about my favourite hobby, but that's enough about my personal perversion. Perhaps this genre will only be done justice with the advent of an A1200 specific flight sim. Until then, don't bother with this.

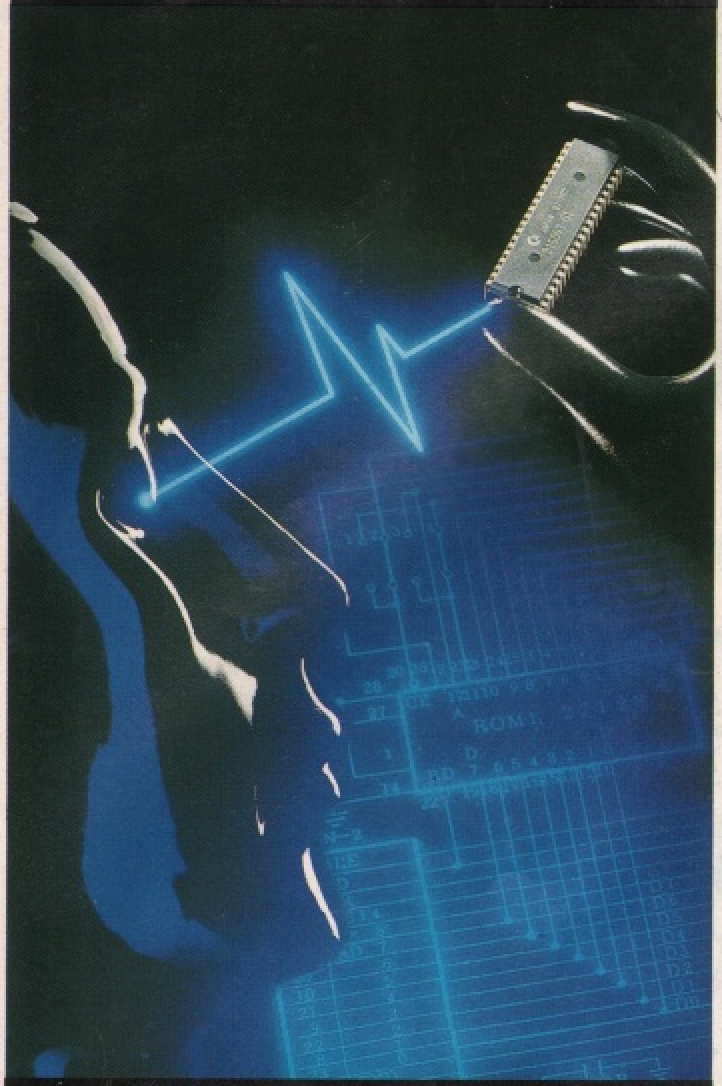
38%

Jon Sloan



The outside views come in very useful if you get disorientated and can't see the ground. They're also good if you've got a bogey on your tail and can't figure out where he is.

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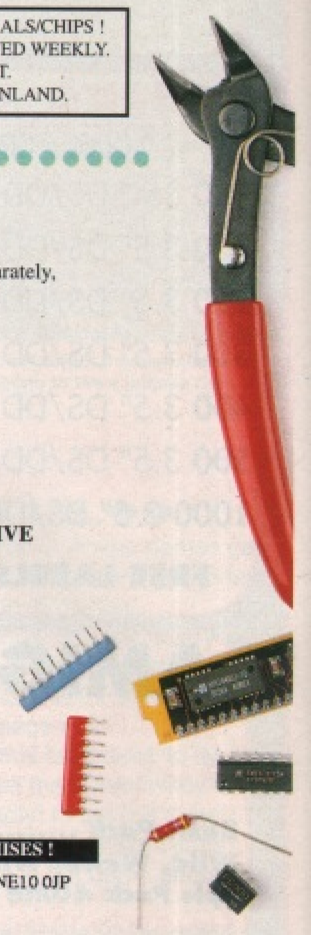
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GUNSHIP 2000

If this neat chopper sim's been getting your head in a spin, then who better to help you out than the man they call 'Chopper Ace', our own man in the cockpit Tony Dillon.



Remember, at the main screen set your theatre of duty to the European scenario.

Top: Anyone who couldn't finish a mission on these settings is a wet weed and doesn't deserve to live.

Like all Microprose simulations, *Gunship 2000* is based on promotion and reward. The more medals you carry, the more celebrated a pilot you are.

All mission scores work on a points basis, but the only way to get the highest possible mission scores is to face the ultimate challenge – fly a mission with all options set to their hardest settings. Here's a course of action for those who want to be able to call themselves 'Top Gun' in front of their mates.

To begin with you need to change the Flight option from 'Easy' to 'Realistic'. This gets rid of all self correction. When you push the nose forward, you start to lose height for example, so get ready to make constant minor corrections, as well as having a hand ready to correct the torque for level flight.

Once you are used to realistic flight, you can change the wind and visibility switches. These don't make much difference, unless either is particularly highly restrictive, such as gale force winds or flying at night in fog.

The next thing that you need to turn off is the automatic ground avoidance. You might have noticed when approaching a mountain or similar obstruction that the game automatically increases torque speed to get you over. Not any more, so keep an eye on the altimeter!

Finally, switch on the realistic landings. This really shouldn't make much difference, just as long as you remember to keep the gear down when landing, and do so very slowly, using as little drop as possible.



In the early days, stick with the preset squadrons until you feel confident enough to take full control yourself.

If you can get used to flying missions with all these set, then you can start to gently increase the enemy skill setting.

Try to fly at least five missions with each setting, to get used to improved tactics, faster response time and generally more enemy per square inch than before.

The ultimate accolade for a pilot is the Congressional Medal Of Honour. The only way to achieve this is to do a campaign mission with everything set at maximum difficulty, destroying loads of targets and returning within a reasonable time for each objective you attain (aim for 30 game minutes per objective completed).

GENERAL HINTS

When you start playing the game, start in the European scenario rather than the Persian Gulf. There isn't all that much difference in difficulty on the earlier missions, and the European landscape can teach you far more in the way of using your surroundings for stealth and cover. For example, one excellent route to your objectives is along the rivers that cross the terrain. If you feel confident enough, try flying along the trench, below ground level. This way, ground-based radar can't 'see' you, and the only way you'll be discovered is if an enemy aircraft spots you visually. Otherwise, use the hill-jumping technique explained in the panel on the next page.

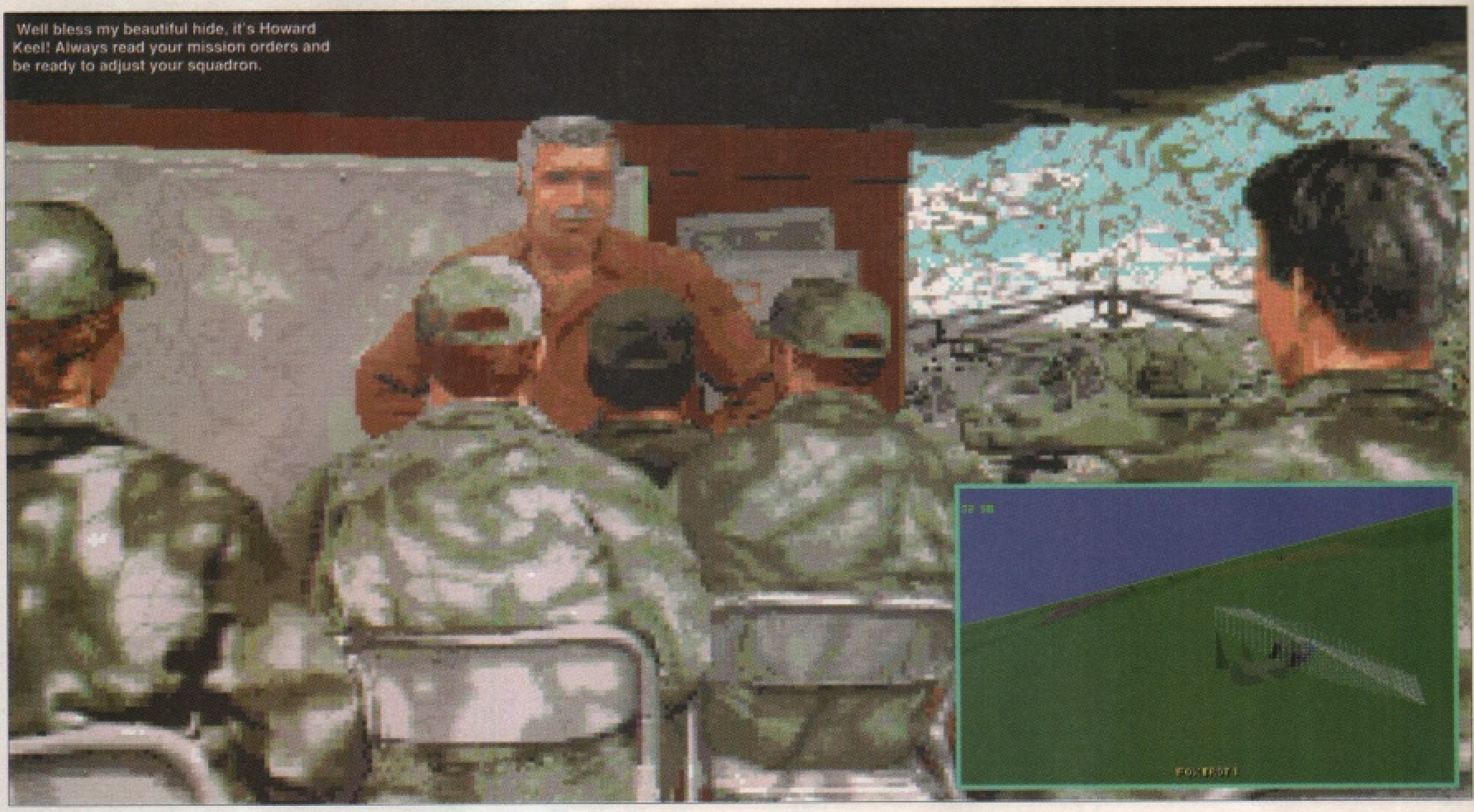
One of the blessings of the game is the co-pilot. Use it to control the counter-measures at all times, as things can get fairly hectic in battle and you don't really want to be fumbling around the keys and racking your brains trying to remember the correct response to a radar guided missile. If you like, you can also get the co-pilot to handle the weapons systems, but I always find that it takes the fun out of combat.

If you are running low on supplies, and the FARP point is too far



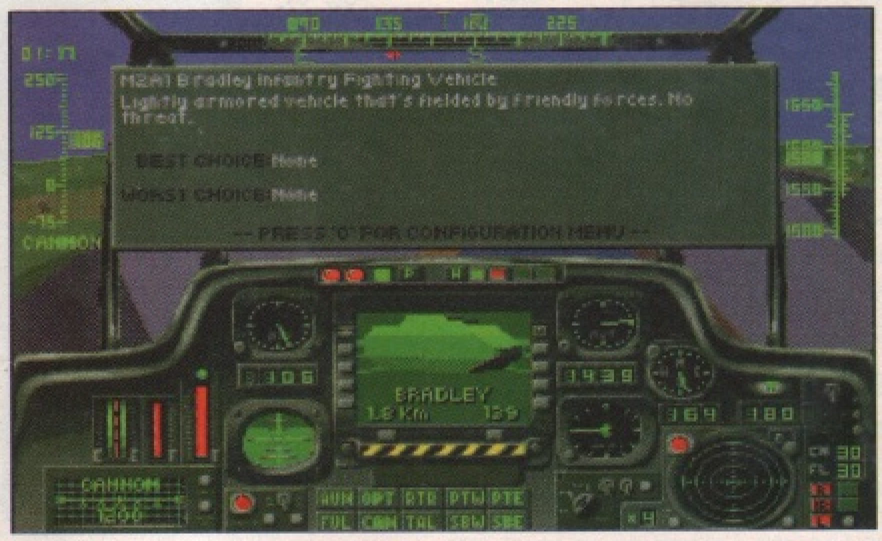
When taking on a seek and destroy mission, plot a triangular course like this one on the map screen.

»



Well bless my beautiful hide, it's Howard Keel! Always read your mission orders and be ready to adjust your squadron.

Above: When hopping between hills, keep nice and low. This keeps you off radar and out of visual range.



Right: When in doubt as to how to take out a unit, or if the unit is friendly, then switch on the pause mode and all will be revealed!

» away, or there isn't one on your mission, head for the base instead. You can refuel and reload there as many times as you wish.

Learn to read the HUD, as well as the dials in the cockpit. If you take some damage, you could lose all the dials, so it helps to be prepared. Should you take too much damage, but have completed at least one objective, then head for the base. It's better to take the points than take your life.

Similarly, if you find you are so damaged that one more shot will cause you to crash, or you just can't muster the power to lift off again, then land and use the end mission (alt - E) keys to abort. You never know, you might get rescued, which is a lot better than dying!

HILL JUMPING

When you've got a vehicle as stealthy as a helicopter, there's no point charging around like there's no tomorrow. Learning to work with the terrain rather than against it is the secret to a long and prosperous life. Hill jumping is a way of sneaking around without being spotted, leaving you in control of the situation at all times. It works like this: using the small map in the centre of your cockpit, find the first hill or mountain on your route, and fly at a very low altitude towards it, stopping once you reach it. Check your radar to see if there are any enemy units on the other side. If there are, use the pop-up attack to take them out, and then locate the next hill on your way. Now fly around the hill and head towards the next one at a low altitude. Keep repeating this process, and you should have a trouble free ride.

ATTACKING

Hovering is the only real advantage that helicopters have over jet aircraft, and if you don't make full use of this in combat, then there's no real point using them at all.

In the hilly terrain scenarios, there is one main mode of attack that really works, and no it isn't rushing through the middle of the plains with cannons blasting. If you've ever looked at any manuals for helicopter combat games, you'll have heard of an attack strategy that goes by the name of 'Pop Up'.

Use your radar and the mini-map in the centre of your cockpit to hill jump to the nearest targets. Now hover behind the hill with your targets on the other side. Take a quick breather, and use the shift and equals keys to quickly rise, or 'pop up' over the top of the hill. Lock onto the target you aim to hit, and wait for them to fire. When they do, use shift and minus to drop back down.

Now hover again and wait for the missile fired at you to slam into the side of the hill. Once you hear the explosion, pop back up and fire at your target before they have time to reload. Easy!

There is another way to do it, and that's to sneak around the hill rather than over it. For this to work, your target must be very close to the hill. Hover behind the hill as before, and then fly around it at a low altitude with weapons ready. As soon as you target, start firing, and destroy the target before it spots you.

You can mix these two tactics with the more intelligent enemies. For example, hover behind the hill, and then pop up. Drop as before when the enemy fires and now move around the hill. The enemy unit will be loaded and ready, but aiming at the top of the hill. You now have all the time in the world to destroy it before it spots you and starts turning toward you!

That should be enough to get you well under way with *Gunship 2000*. Have fun! CU



Flying along the river itself lets you get below ground level. What a superb hiding place!

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THE TROLLS HEAD

A chill wind gusts from the North, whipping the clouds across the dark night sky. The cold fingers of the storm tear at the shutters of the Troll's Head Inn. Never fear, if you have made it this far you're safe.

HEROES WANTED BOARD!

LANDS OF LORE – THE THRONE OF CHAOS

Have you ever gone to bed with a beautiful young maiden, only to wake in the morning next to a hideously ugly crone? In that case you may have already met Scotia, agent of the Dark Army, who is naturally nauseating, but capable of changing her shape. On the other hand you may just have gone home with the Troll's Head barmaid! You may be wondering why Westwood Studios, who wrote *Eye of the Beholder*, chose to give away the task of writing *Eye of the Beholder III* to another company (who incidentally appear to have made a troll's ear out of the job!). The reason was that they were busy creating *The Throne of Chaos* for an early winter release from Virgin Games. The game has 30 unique areas to explore including creepy castles, dungeons, ancient ruins and The White Tower. Heroes signing up for this campaign are promised an even smoother combat system, 50 different intelligent monsters, plus stunning graphics. The Management strongly recommend that you get your name down early for this tour of duty as there is sure to be a rush of late bookings.

RULES OF THE INN

• Tickets for the Wizard's Ball are now on sale behind the bar – price 1 Zorkmid each.
Attention: Please note this is a Raffle not a Dance!
• Arm wrestling is not allowed. Especially if you're using someone else's arm.
By Order of The Innkeeper.

SHRINE OF KNOWLEDGE

Draw near and ask your question. Don't be embarrassed, even the most noble adventurer is sometimes stuck for a clue. Behind the velvet curtain is the Shrine of all Knowledge where the deepest secrets are revealed and hearts are laid bare.

ZORK 1

In Australia men are men, and kangaroos are nervous. Kerry Zwar is from South Australia and his letter indicates that the age of the 'New Man' hasn't quite caught on down-under. So far he's amassed 240 points in *Zork* by killing the thief, mapping the maze and the coal mine, sailing the river and draining the lake. He sounds like a blooming, ecological disaster. No doubt he's also skinned a couple of 'gators and chundered under the bridge, but he didn't think that worthy of comment. Not content, he now wants to know how the hell to get into Hades, and what in hell he needs to do to get past the bat in the mine?

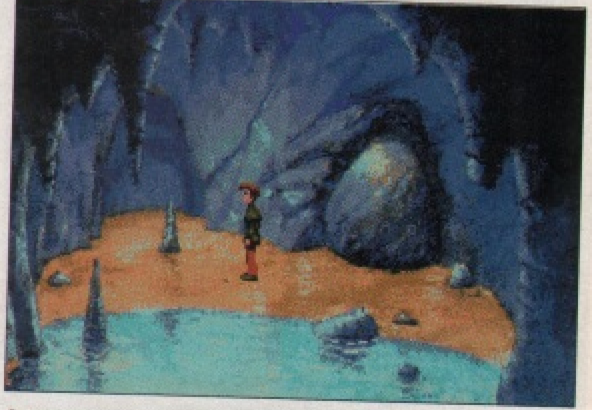
The Shrine replies: Most people would wish to avoid going to Hades, but I don't suppose it will seem so bad for someone who's been brought up in the outback. The trick you must learn is how to exorcise demons. As all priests will tell you this must be done with a bell, book and candle. Those items can be found on the altar which is two floors above the gates to Hell. When you ring the bell it will become hot and you will drop it. You will also drop the candles. At this point, in one command, you must: 'Get the candles, light match, light candles with match'. If you now read the book the demons will get zapped. The bat you speak of is a vampire bat. And what do vampires avoid like the plague? French cooking of course! If you don't have a bowl of frog's legs in your tucker bag, I suggest you use a clove of garlic which is the next best thing. You'll find this magical, culinary ingredient inside a bag, which is to be found in the kitchen of the house near Canyon View.

INDIANA JONES AND THE LAST CRUSADE

James O'Brien of West Glamorgan has written to say that he believes the Troll's Head is the greatest source of knowledge in the known world, but of course we all know that so let's just get on with his problem. It would appear that James cannot play the musical skulls in the Indy adventure. No matter in what sequence our tuneless friend raps his bony xylophone it scores a fat zero on the musical scoreboard.

The Shrine replies: The answer is to be found in the Grail Diary my son. Consider the row of six skulls to be numbered, from the left, 1 – 6. In that case you must push the skulls as follows: 53342. It's a lousy tune, but it's sure to be a hit.

CURSE OF ENCHANTIA



Once you cross the sea-bed in the *Curse of Enchantia*, you'll emerge here in this secret cave. However, crossing the sea-bed has difficulties which just might have you seeking help from the Mystic Shrine.

Fathers are supposed to know everything, but Stuart Ruben's father is a bit of a washout. Having got his son into the *Curse of Enchantia*, he has callously left him to the tender mercies of electric eels on the seabed. Shocking I call it. To be fair he did help him find the worm in the sand before he abandoned him to his fate, but that hardly excuses him. The pair know that they should give the worm to the big fish for more oxygen, but that is where their partnership foundered on the rocks.

The Shrine replies: I assume you know that this is 'Cherish a Fish Week'? Otherwise known as, 'Be kind to a Cod and Ditch your Rod!' If you were a good-hearted type you'd have released the little fish which you saw trapped behind the railings on the first screen. Next find the coin behind the big rock, then go left and look at the hole in the sand. Pick up what you find there and give it to the Mr. Fish who will repay you with Oxygen. It's now that your Good Samaritan work will be rewarded because the little fish will reappear and drop something which you can pick up. Give this object to a passing turtle and he'll oblige you by giving you a lift over the eels.

ZAK McKRACKEN

It's not often that you'll come across a two-headed squirrel, but if you do you'll be glad that Frazer Young of Redditch took the trouble to ask what the normal procedure is for dealing with such an animal. Frazer and Zak McKracken have got inside the cave in Seattle but are now at a loss.

The Shrine replies: If you are inside the cave you have obviously already worked out that you deal with Siamese squirrels by giving them packets of peanuts which you find on the aeroplane. What you really need to know is that you should pick up the tree branch outside then enter the dark cave. Use the 'What is' pointer to move around the top half of the screen until you find a bird's nest. Knock the nest down with the branch. Use the pointer to locate the pit in the floor, then place the nest in it. A quick flip of the lighter (which you should have found under a cushion on the plane) and you'll have a cheery fire going.



Following up a story of a two-headed squirrel, our reporter is about to embark on a story more fantastic than anything the National Enquirer ever made up.

MONKEY ISLAND II

I have received a goodly number of letters from poor benighted souls who cannot find one or other of the items needed to give to the Voodoo woman to enable her to deal with Largo. For all of you, I'll stick a gold coin of my own money into the Shrine's slot and let it give you a quick hint.

The Shrine replies: Largo's hair comes from the toupee in his cabin. Of course you'll have to release the alligator first to create a diversion. The thread is from his clothes which he'll put in the laundry if you balance a bucket of mud above his »



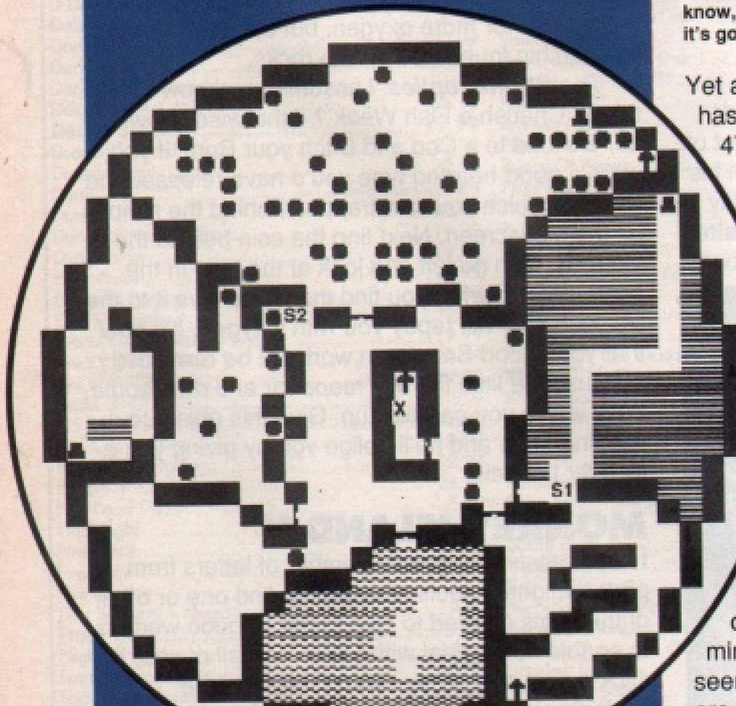
Take a special note of the sign which hangs at the end of the bridge in *Monkey Island II*. The spade which you can see is detachable, and if you intend looking up old friends in the graveyard you're going to need it.

ABANDONED PLACES 2

You would think that anyone who had managed to complete *Dungeon Master, Chaos, Eye of The Beholder 1* and *2, Black Crypt* and the *Bard's Tale 1* and *2* wouldn't need to seek help from the Mystic Shrine, but not a bit of it. Robbie Priestly from Co. Wicklow in Ireland has come a cropper in *Abandoned Places 2*.

On the first level of the Tower there are a number of pillars which block all routes, and despite repeated head butts from our bold adventurer they won't move. Apart from some annoying quirks, this game does have some good features, but it can be a swine at times. What do you think of it? The reviewers all had different views, but I'd be interested to hear what you think.

The Shrine replies: If you consult the map on this page, I'll explain what you must do. If you consider the top left of the map as grid co-ord (0,0) then go to position (23,20). That's 23 squares East and 20 South. Face South and locate the hidden switch in front of you. This removes the pillar at (10,12) and allows you to access S2. This will open the door at (14,12) allowing you to get to the North Room.



Trouble with pillars? *Abandoned Places 2*, Level 1 of the Tower can be a tricky place to negotiate until you find the secret switch.

» cabin door. The laundry ticket will be found behind the cabin door. The liquid is his spit which you'll collect from the wall of the bar using a piece of paper from Wally's room. (Euck!) The grandfather's bone comes from the cemetery, but you'll need the spade which is fixed to the sign on the bridge to dig it up.

INDIANA JONES AND THE FATE OF ATLANTIS



Whatever did happen to the lost city of Atlantis? You may not know, but Indiana Jones is on the case so you can be sure that it's going to be fun and adventure all the way.

Yet another golden-oldie, called Colin Hayword, has written to own up to the fact that he is both 47 and a graphic adventure nut. Colin has decided to solve his disk-swapping problem by upgrading to an A1200 with a 60Mb hard drive, but he requires the help of the Shrine to solve his confusion with the latest Indy epic. Having got to Atlantis, made 30 beads in the machine, rescued Sophia from jail, he now can't get past the octopus.

The Shrine replies: Instead of all the aggravation you should take up a relaxing hobby like fishing. Even more relaxing, take up crab fishing. Of course you're going to need a crab pot and some bait to put in it. Did you pick up some food during your sea voyage on the submarine, or did you eat it and ruin your diet again? Never mind, you can always beat up a guard for they all seem to have some food on them. I'm afraid there are no crab pots around, but if you search that entrance maze again you'll find an abandoned lorry with a skeleton inside. I'm sure an experienced adventurer like yourself won't mind ripping out the poor soul's rib cage and using that as a pot. (I think I'm going to be sick...)

LURE OF THE TEMPTRESS

At last the letters I am receiving concerning *Lure* centre around the final puzzle – 'How do you lower the drawbridge?'. Gemma Cullis of Luton has used the fat on the lever, but can't do anything with the winch.

The Shrine replies: There are times in one's life when me must get a little help from our friends. Surely there is someone you can ask to operate the winch while you concentrate on the lever. C'mon, you must have at least one friend. Even Tony Gill has one friend – well more of an acquaintance actually.

BANE OF THE COSMIC FORGE

Battle-weary but unbowed, Mark Mcleod (of apparently nowhere in particular), has arrived before a drawbridge in *Wizardry 6*. The complicated instructions on the control panel seem to be too much for our hardy friend (all muscle, no brain I suspect). 'Please,' he begs, 'which buttons should I press?' Not content with one question he also wants to know, 'What does the green parrot do?'

The Shrine replies: I would have thought it obvious what the green parrot does. It makes a mess on the floor and eats crackers! Isn't that what they all do? Again I will take the opportunity to clear up a few *Wizardry* queries, so put your ear to the grille and listen closely. You need Mystery Oil to open the drawbridge panel. The order of the buttons is found in a dictionary, however if you are desperate this is the sequence: Safety, Pump, Coilwrap, Truss, Safety and Winder. The treasure is buried on Giant Mountain. The password is Skeleton Crew. The green parrot bestows Armour Magic. Use rotten cheese on the hole in the wall. Give beagle to man in the tower. Merge the steel hook with the rope from the belfry to cross the chasm. The Book of Ramm contains the code for the altar. You'll find this behind the second gate (use the gold key) on level -2. Use the JR Decoder ring on the Deadman's log to read it. Use the Wizard's Ring to open the Wizard's Chamber.

As the magical glow from the Shrine fades and dies, these final words of advice are heard faintly, 'It's not the size of your weapon that counts. It's where you stick it.'



If you are still stuck in the early stages of this great game then the Shrine has quite a few useful tips for you this month.

If you have a problem, a notice for the Board, or perhaps you have a piece of scandal which you wish to whisper in the Inn, write to Tony Gill at: The Troll's Head Inn, CU Amiga, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

DIAMOND

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Due to our massive success in the world of PC computers with our own brand name Diamond Phoenix, a company decision has been taken to part company with the Amiga. It must be said that this was a hard decision as Diamond was founded in this market and went on to become Northern Europe's leading Amiga dealer chain, but times change. As of now Diamond will be known as only a PC supplier, although we shall still stock leisure titles and obtain application software to order.

Diamond would like to take this opportunity to thank every single customer, 274,312 in all to be precise, who have supported us over the years with purchases of Amiga related goods from our stores, and we hope you will still come and visit us for your software or if you switch over to a PC in the future.

So for you, and all Amiga buffs out there, Captain Diamond as a last gesture is literally giving away every piece of Amiga hardware we have in any of our branches. This is a one day only sale at our Tottenham Court Road branch in Central London and will be held on Sunday 1st August.

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GET SERIOUS

Brace yourself for another trip through the wonderful world of technical wizardry with this month's Get Serious section.

CU AMIGA TOP RATED

The CU AMIGA top rated accolade for non-games products scoring over 90%. They will definitely be worth the money and are likely to act as a benchmark for future releases.



AWARD CONSTRUCTION KIT

Loosely based on the old *Award Maker* program, *ACK* contains 50 different awards and certificates ranging from the commonplace '1st Place certificate' to the humorous 'You've been Had' award. There are also 12 blank templates for you to fill as you see fit. Many of the awards also include appropriate graphics.

Once you've chosen the style of the award that you want, a full-colour screen representation will be shown so that you decide if it looks OK.

The award is basically composed of a number of parts: the border, the headline, the body text and a seal (if required). Each of these elements can be altered to your heart's content. The program comes with six headline fonts and eight for the body text. The body text is where you actually put the recipient's name and any details about the nature of their award. If you prefer, you could leave this area blank.

There are also 11 different border types ranging from the conventional foils and scroll-work to movie film and icicles. These borders are drawn in two colours which can be altered via the palette. In fact the colour of every element of the program from text to borders can be changed.

A choice of five seals (lips and skull and crossbones being the two most interesting) ensure that your awards will be finished in style.

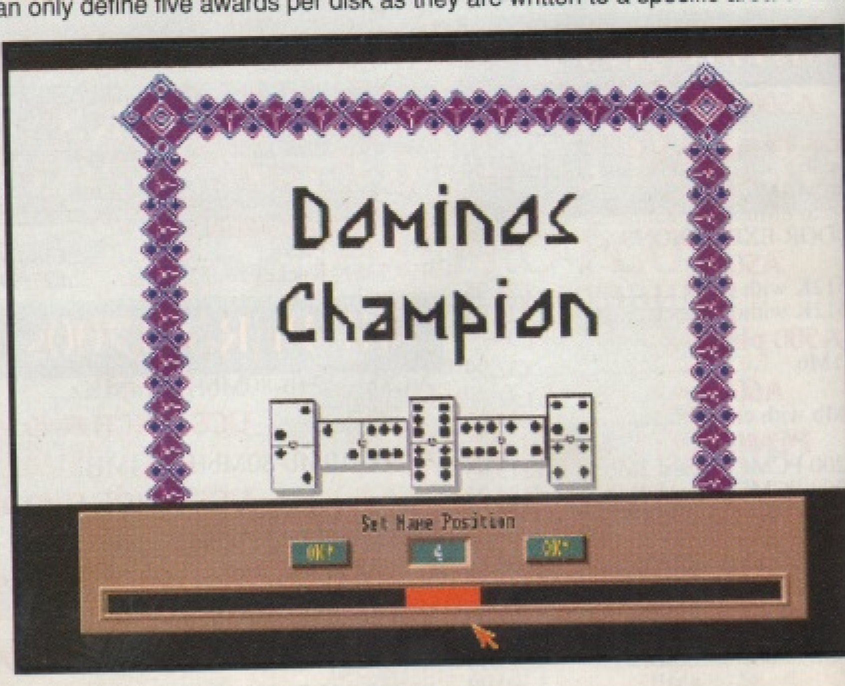
When it comes to printing, *Award Construction Kit* uses your Workbench printer preferences, so provided they're set correctly, you shouldn't have any problems. Awards are printed as a straightforward screen dump so they don't take too long to output. This does mean that graphics and text can look a little blocky sometimes, but the overall effect is quite convincing. The program can be installed to hard drive although the installation program is very basic – DH0 or DH1 only. Fortunately, it's an easy matter to install the program elsewhere and create your own assignments in the startup-sequence.

ACK has space for a number of user-defined awards, and these can be stored on disk for rapid retrieval. Unfortunately, you can only define five awards per disk as they are written to a specific area of the disk. I suppose that you could make lots of duplicate disks if you define a lot of styles.

An enterprising reader could make themselves a bit of money at fetes or even on a market doing mostly humorous awards. The program is certainly quick and easy enough to use.

Available from: E.M. Computergraphic, 8 Edith Road, Clacton on Sea, Essex, CO15 1JU. Tel 0255 431389. Normal cost £39.99 but being offered at the introductory price of £29.99 for a limited two-month period.

85%



ILINIOS PROFESSIONAL

It's a database! It's a mail merger! It's a labelling system! It's Ilinios Professional! The blurb on the box claims that it was 'written with the user in mind', and it looks as if it could live up to the claim when you first boot up.

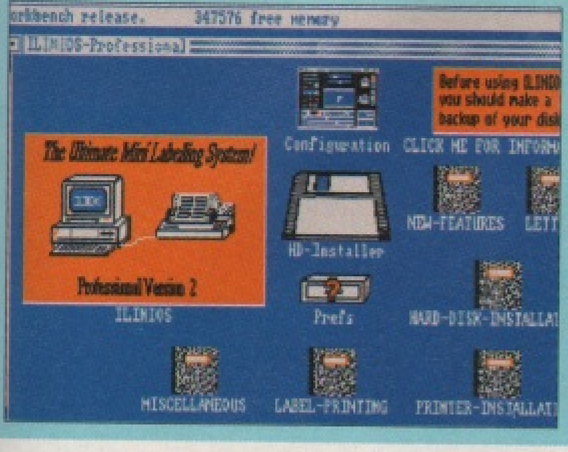
Earlier versions of this program were purely keyboard controlled, and not too user-friendly. Now the interface has been updated to make use of the mouse, and it's a hell of a lot quicker to get around the various functions.

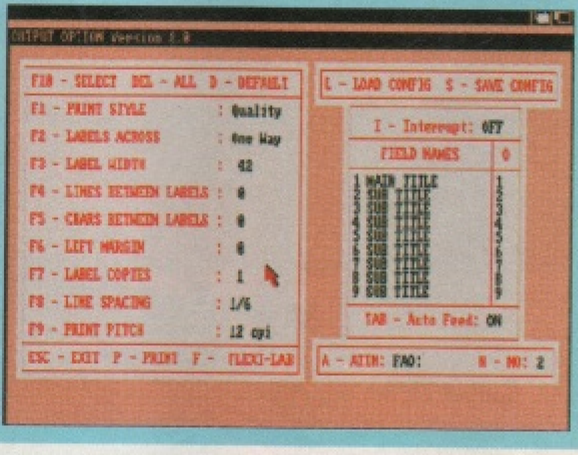
On the database side, you'll find that it's capable of much the same functions as those of any other basic database available on the market today. IFF pictures can also be attached to and files you enter. Included with the software are some address, disk, and cassette labels.

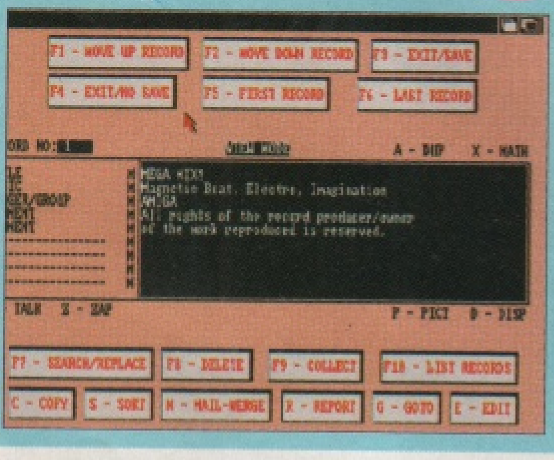
Ilinios Pro has enough features to take care of a modest database/mail-shot requirement. Including some sample labels is a good idea, and lets you get started straight away. If you need a low-cost labeling system and database, *Ilinios Pro* is worth a look.

Available from: Code Works Software, 31 The Meadows, Hanham, Bristol, BS15 3PA. Tel: 0272 478402. Price: £24.95

70%







XL-1



XL-1 isn't your run-of-the-mill sample CD. Sure, it's chock full of stomping beats, vocals, loops and all the rest of it, this one's a bit different.

It's a two-disc set from Polestar Magnetics, who were also responsible for the fabulous *X-Static Goldmine* double pack. The first disc has a complete cross-section of dance music samples, but instead of laying them out in the usual way, with a section for bass, one for drum loops, one for vocals etc., there are 60 three-bar demo songs, which are then followed by the samples use to create them.

If you're flicking through a CD for a good bass sample, hearing lots of tones one after the other can get confusing, and after a while your ears turn off. You could be passing up some great sounds, but without hearing them in context (ie. playing a bassline in this case), they just sound like a series of drones.

The same could be said about any other sounds you might be sampling. This is where the short demo songs come in. They lend the samples a context, which gives you a much better idea of the effectiveness of the sounds.

The demos are in a wide variety of styles, including garage, house, hip hop, techno, hardcore, ragga, trance, funk and disco. They know their stuff, these Polestar bods. After the demos, there are quite a few tracks of drum samples, including the TR-808, 909 and so on, with a lot of others taken from all over the place.

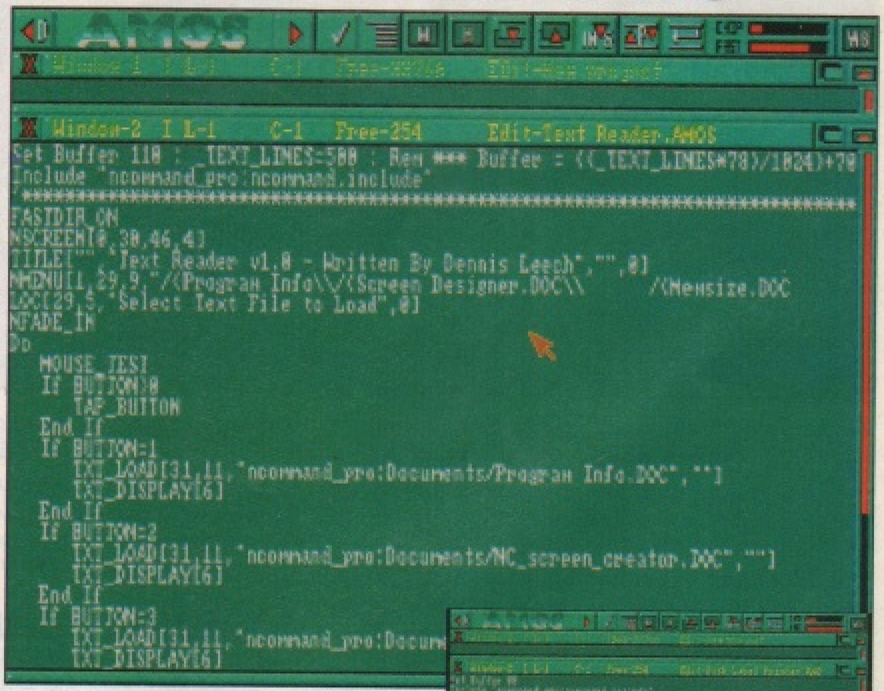
Disc 2 is considerably more conventional, with the various samples being grouped into sections of similar sounds. Some of the samples are duplicated from CD 1, which is a bit of waste of space – space that would have been better used for new sounds. Apart from the occasional repetition, the sec ond CD is top notch. There are plenty of loops in all kinds of dance-orientated styles, along with a good helping of breaks, vocals, fx and chords.

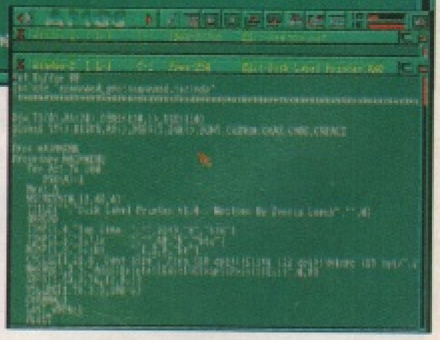
My only quibble is with the price, which seems a bit steep. Other than that, it's hard to fault this delicious feast of dance samples.

Available from: Time and Space, PO Box 306, Berkhamstead, Herts, HP4 3EP. Tel: 0442 870681. Price: £79.95

89%

NCOMMAND PRO





While AMOS is a pretty powerful language, there's always room for improvement. Most programs written in AMOS have a certain look and feel that gives away their origins. This is due to the customised interface, with its own style of requestors and buttons. With *NCommand Pro*, you can give your programs a whole new front end.

The main *NCommand* program comes as an AMOS accessory. When run through AMOS, it gives you 47 new commands to play with. These are all geared towards making your programs more user friendly, offering alternatives to the standard windows and buttons offered by the AMOS system.

Although it runs fine on a 1.3 machine, the end results look and work just like Workbench 2-3 programs. All the usual file requestors and text input boxes are easily created, and even things like cyclic boxes and check boxes are no problem. Another command allows you to knock up progress boxes in a jiffy, and there's also an automatic snoozing pointer option.

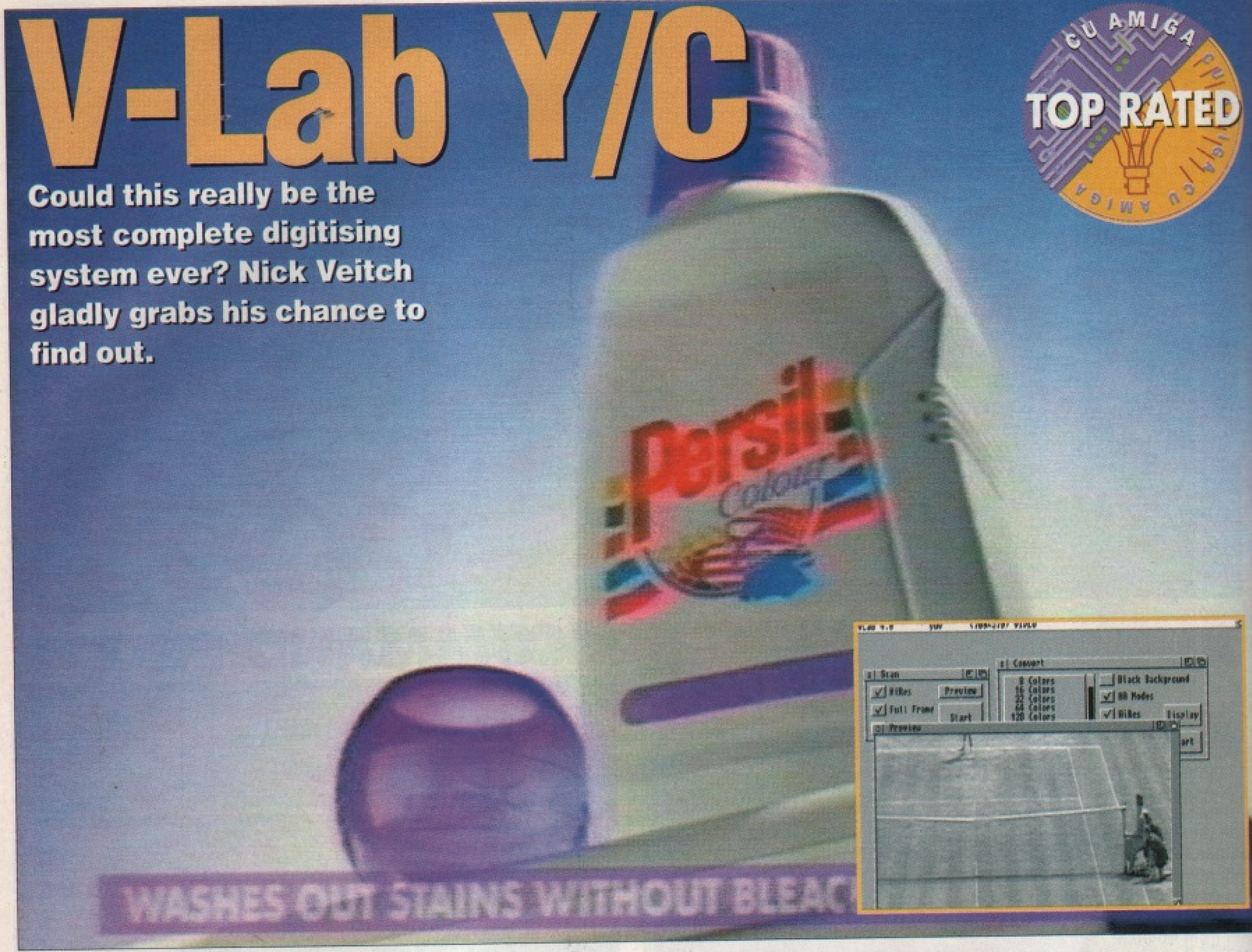
If you want to shake off the stigma from your AMOS creations, and make them a lot easier to use in the process, *NCommand* is definitely the way to go.

Available from: Oasis Software, Price: TBA.

77%

V-Lab Y/C

Could this really be the most complete digitising system ever? Nick Veitch gladly grabs his chance to find out.



Pseudo 18-bit colour is the best you get from PAL. Previews can be displayed in a window on the grabbing screen itself.

There used to be any number of digitisers around for the Amiga. There still are, but these days most of them seem to come from the same company – MacroSystem. Why? Well, they all address different needs.
The very latest is V-Lab Y/C, a reworking of the original Zorro card version of the grabber. This is a board developed specifically for a component system such as the S-VHS standard.

It will grab any component Y/C source so you can use it with any equipment which has a Y/C output. At the moment this includes a large number of video decks and camcorders. The downside to this is that they tend to be the more expensive pieces of equipment, but the extra picture quality is worth it. It also has two composite source inputs, so you can use horrible inferior image sources if you wish.

SOURCEY STUFF

It is necessary to select a source before you start grabbing. There are a number provided, including the 'DEFAULT' one which is active at startup and is more or less designed to work with a bog-standard VTR.

If you aren't happy with this for any reason, there is always the option of defining your own. There are a range of filters covering the chrominance, luminance and noise. This is also the place to set the VTR switch if your source is a VTR.

The reason for this is that video tape decks are all the same. You may think you are getting a regular 25 frames per second, but the actual speed can vary quite horribly. This is simply not good enough when you are frame grabbing. Grabbers may not need an exact 25 fps playback speed, but they do like to get their frames regularly.



Left: The S-VHS plate test. Top half is nasty VHS. You really can see the difference.

WHY Y/C?

If it is possible to send images down one wire, why should we bother with two? Well, the composite system is fair enough, and it does go easily down one cable. This saves effort and expense, but it is a bit of a con. Video images are made up from two signals, Chrominance (which determines the colour) and Luminance (which determines the brightness).

In a composite signal, both these values are encoded into a single waveform, but there is a resultant loss in quality. Keeping these signals separate reduces any interference due to crossover and bypasses the losses caused by the encoding process.

The disadvantage of a component system is that there are twice as many channels of information, making it almost completely incompatible with conventional composite technology. There is no point in having a component device in your system if everything else doesn't work in component, too. This means that it is necessary to have a Y/C video deck, too.

Such decks do exist, mostly conforming to the S-VHS standard, which doesn't make any difference to the signal they produce, but does make a difference to the way these images are stored on tape.

The difference can be go deeper though. An S-VHS VTR, or any component video deck, can still output separate Y/C signals whatever source tape you use. If you have S-VHS tape though you are going one better. The S-VHS format has a resolution of around twice that of normal VHS tape, giving a much better picture.



Movies on CD could be of this quality.



Pictures of this quality are hard to come across from any source. Especially one like this.

This is not a problem with V-Lab, as it includes custom circuitry to get around this problem. This is an example of more MacroSystem ingenuity, as it is all handled by some Philips designed circuits which make up a fair percentage of the board. The image width, height and offsets can also be specified here.

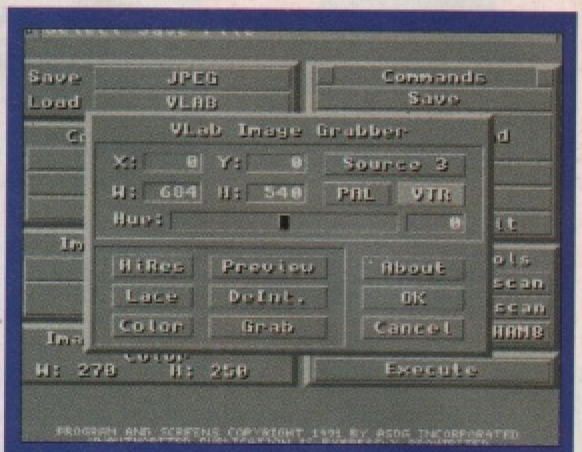
V-Lab can handle image areas of 720 pixels by 625 lines (in PAL mode). In practice you will not often need this information as the first 34 lines or so are used for test information and encrypted data broadcast (such as teletext). These can be useful to grab as they may help you better adjust the output of your video source to give a clearer picture, but for normal use you'll want to ignore them. Similarly there is usually quite a gap down both sides of the screen, which you may choose to ignore. Different sources may well give you different image borders, so it is worth defining the ones you use most often.

DOING IT

Once you have a source set up the first feature you will want to use is the monitor. This opens up a window on the current V-Lab screen which allows it to show the input that V-Lab is currently receiving. You can choose between two sizes on the Amiga display, but the image can also be piped directly to the Retina display card if you have one installed. This is by far the best way of using V-Lab, especially if you also have a copy of ASDG's *ADPro*.

The V-Lab monitor window is good enough though, and is quite detailed on a 16-colour screen. It is able to keep up with the action too, delivering around seven frames per second on the A4000/040.

The second stage is the actual grabbing of the image, which MacroSystem refer to as scanning. The easiest way to do this is to call up the scan

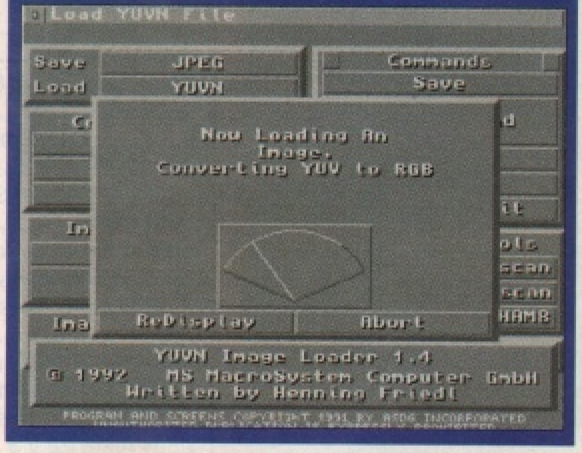


ADPRO SUPPORT

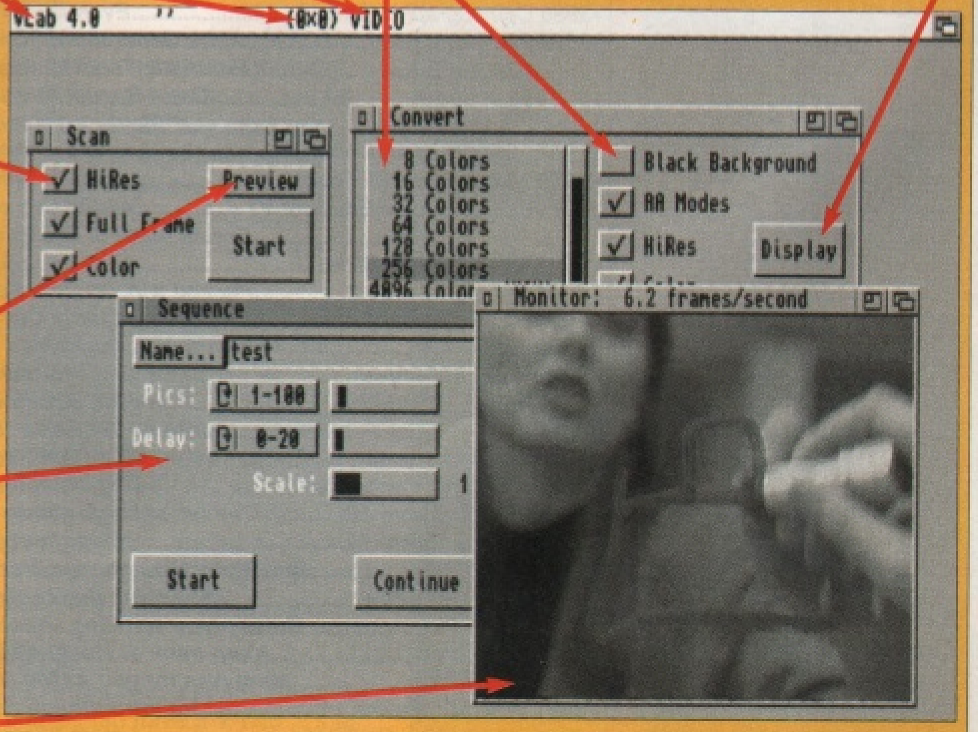
In many ways, if you are just after a quick grab, the loader provided for *Art Department* is a lot more convenient than the V-Lab software.

The loader works like any other *ADPro* loader, but when selected it comes up with a selector panel with most of the grabbing options available as gadgets. These can control grabbing area, interlace, colour/mono and whether the image is to be hires or not. If you press the grab gadget and know that you missed the moment you were waiting for you can retry without having to convert the image. Only when you select 'Okay' is the image internally converted to RGB values. Because *ADPro* allocates a large bank of contiguous RAM on startup these conversions can be quicker than ones done by the V-LAB software.

There is a YUV loader supplied as well, so YUV files can be loaded directly into ADPro and processed.



A BRIEF ANATOMY OF V-LAB



ALTERNATIVE BUYS

The only real alternative to the V-Lab hardware is Rombo's Vidi system. This is probably the longest running digitiser on the Amiga, having graduated from that well known home computer, the Amstrad CPC.

There have, of course, been many updates to the Vidi system, the latest version being Vidi 12, reviewed a short while ago. The software on the V-Lab system is undeniably more flexible, but Vidi does have the advantage of producing reasonable quality images at a lower price. If you are grabbing on a tight budget you may want to call Rombo on 0506 414631.

»

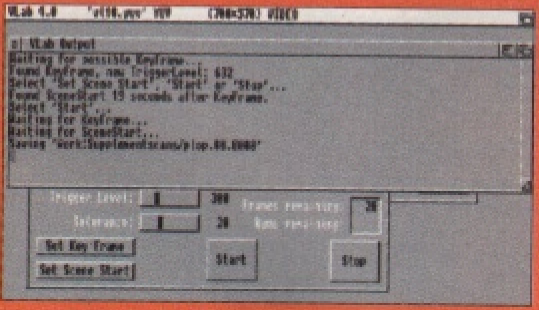
INTERLEAVED RECORDING

The most impressive feature about this version of V-Lab is not the hardware, but an addition to the software (which currently only works with V-Lab Y/C) called Interleaved Frame Recording, or IFR.

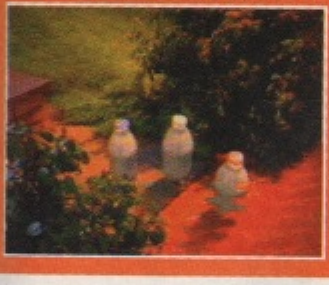
The principle of this involves the user choosing a pathname for the sequence and starting a video tape running. When the IFR is activated it then looks for a key frame and having located one asks the user to define the start point of the sequence.

The software then grabs as many frames as it can and, with the air-link device and a suitable macro, will rewind the tape and start again. This time around it knows which frames it has and ignores them. It will continue repeating the cycle until it has grabbed all the specified frames, usually in seven or eight passes depending on the speed of your storage device.

You must set the maximum number of frames and the interleave gap before you begin, but once it's running the software does everything itself. A more detailed description of this feature was given in last month's feature on Full Motion Video.



Obviously if we showed you every single frame you wouldn't have noticed much difference.









The lines at the top can be used to adjust the output from your source.

window, select your options and click on scan. The options are the same as in previous versions of V-Lab, allowing you to grab in high or low resolution modes, full frame and colour/mono. There is a preview function which roughly converts the image into an Amiga displayable file and shows it in a window, on a separate screen or on a Harlequin or Retina display card.

Once the scan is completed, you have a YUV image in the V-Lab's buffer. Unfortunately, you can't actually display this image directly – it has to be converted to RGB first. The reason the image is grabbed this way is because that is the way all video images are transmitted. By grabbing the complete signal the V-Lab card gets the best possible image.

You can now save the image out as a YUVN file, a format developed by MacroSystem and now supported by *ADPro*. You may also convert the image within V-Lab to basically any Amiga image format you can think of, including 24-bit IFF and 24-bit DEEP formats. This can take a while though, which is one of the reasons that V-Lab doesn't automatically generate an Amiga image.

The YUV images are not exactly 24-bit resolution, they are more like pseudo 18-bit. That is a restriction of the PAL system though, not a fault in the hardware. Some sources could give you an RGB output at 24-bits, but there aren't many of them outside jolly expensive studio setups, so YUV is fine by me.

MACRO CITY

V-Lab Y/C, like its predecessors, is fully ARexx compatible. Every feature is accessible through the ARexx port and there are even some special settings which cannot be altered any other way.

Macros can easily be added to the system, either pure ARexx scripts or ones using the concise V-Lab macro language. Examples are provided. Writing your own macros can be a bit tricky, but that's ARexx for you…

The manual is excellent. It may be lacking slightly in the tutorial department, but it does explain even the basic features of AmigaDOS / ASL requestors are explained. Someone who has never touched an Amiga before could operate V-Lab in a matter of minutes. There is even a section which explains some aspects of video technology and the display systems, which is going well beyond the call of duty. The only real problem I have with the manual is that MacroSystem don't use strong enough glue – a few pages of mine have already left the fold.

CONCLUSION

If you have a WB2.0 Amiga with a spare Zorro slot and a camcorder you should have a V-Lab. It's as simple as that. If you have an SVHS tape deck or better still, an S-VHS camera you need V-Lab Y/C.

The images possible on this system are the best grabs I have ever seen on the Amiga, or on any PC or Mac system come to that – including ones which cost thousands of pounds. Some of them you would be hard pushed to tell from scans done on a decent £1000 desktop scanner. At this price it would be invaluable to anyone with a small video setup. The IFR feature could make it extremely useful to people who want to develop digital graphics. CU

VERSIONS

The original V-Lab was produced as a Zorro card for Workbench 2.0 machines. The image quality was excellent, but at that time very few Amiga owners actually owned the right machines.

The next stage in development was the V-Lab Par, a parallel port version of the hardware which was released towards the end of last year. At last ordinary Amiga users could grab with clarity and accuracy, albeit rather slowly.

The V-Lab hardware was also supported by the Retina board, a MacroSystem 24-bit solution. The paint package bundled with it was able to grab directly from V-Lab.

Finally we have V-Lab Y/C and its amazing new software. At present the IFR grabbing software will only work with the latest version of the card, which includes version 4.0 of the software.

JARGON BUSTERS

- COMPOSITE – a video signal which has all the YUV signals encoded into one.
- Y/C – a component video source, with two channels, Chromanence and luminence
- VTR – Video Tape recorder

MACROSYSTEM £381

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EASE OF USE 89%
The IFR may be a little over complicated, but grabbing is as easy as ever.

VALUE FOR MONEY 90%
All this and it costs less than a CU night out.

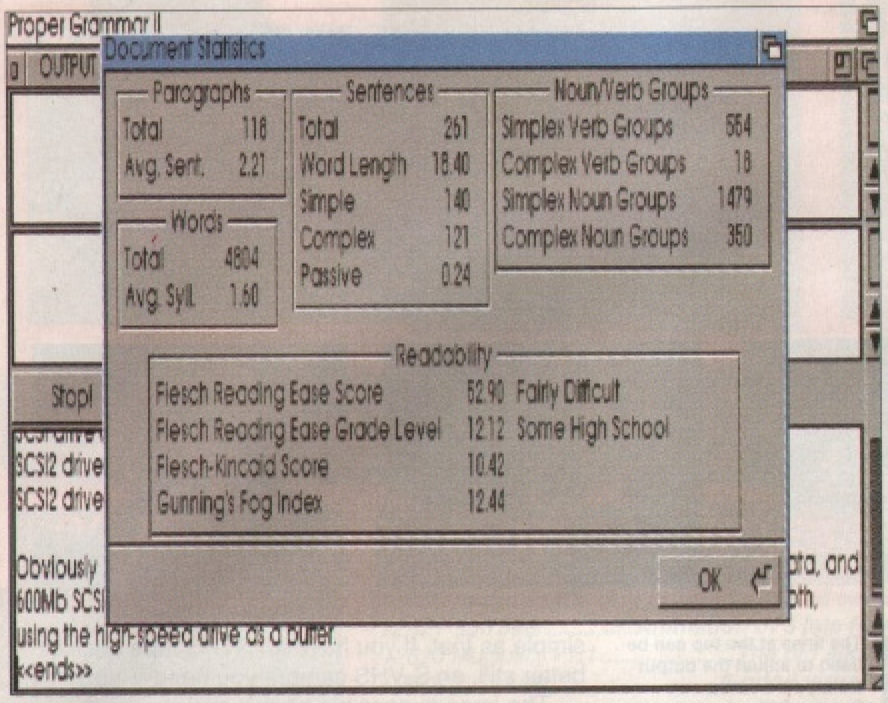
EFFECTIVENESS 95%
Quite simply the most stunning digitised pictures I have ever seen.

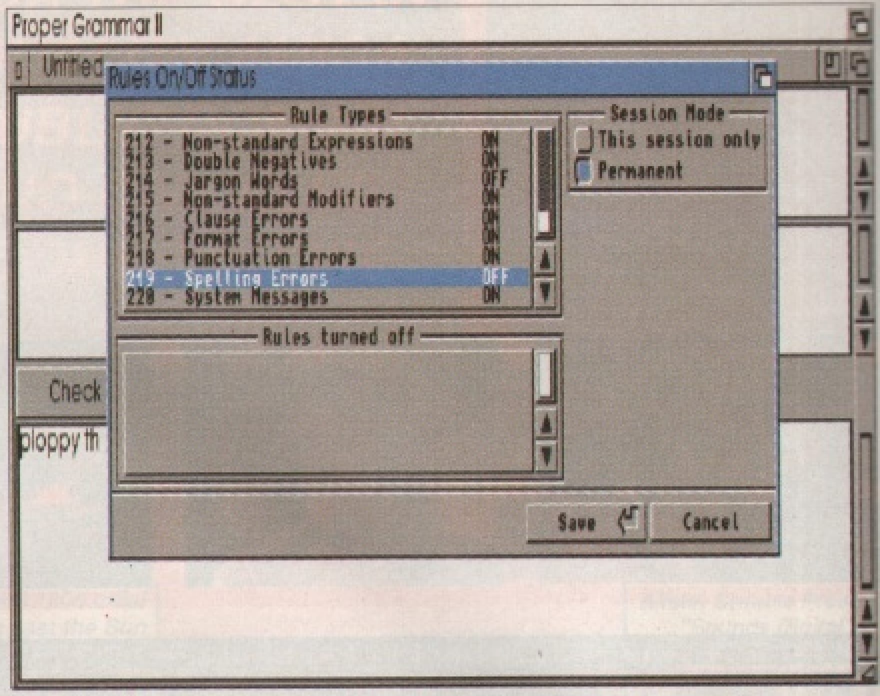
FLEXIBILITY 96%
The extensive macros, the additional hardware support, the user configurable screens, the amazing…

INNOVATION 98%
Perhaps MacroSystem should turn their talents to ending hunger, world peace or the space program.

> *Simply the best. No other digitiser comes close.*

OVERALL 94%





Above left: You can keep tabs on your stats easily enough.
Above right: A list tells you which rules are currently active.

Proper Grammar II

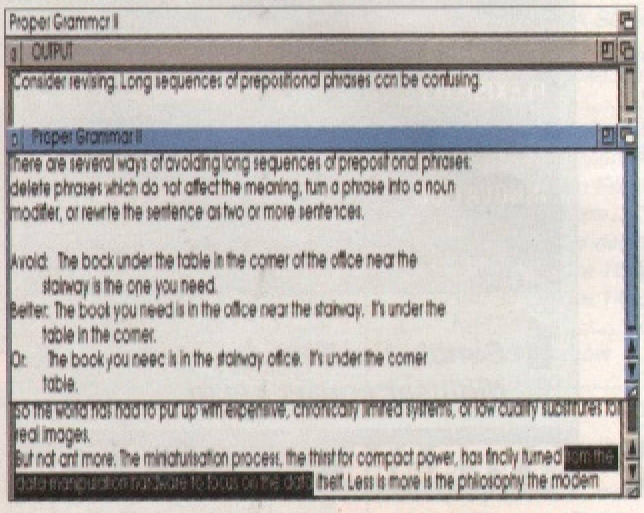
If your phraseology is old hat, Nick Veitch has something to say to you...

It is very rare, in these enlightened times, to find a word processor that does not include some sort of spell-checking dictionary utility. A great many of them, like the one on this month's coverdisk, have dictionaries with vocabularies of tens of thousands of words – far in excess of the average human's knowledge of the language.

Unfortunately, writing correct English goes a little further than just an ability to spell words correctly. With longer, more obscure words, the reader may not even notice that it was misspelled in the first place. A more obvious pointer to literary ineptitude is to infringe the laws of English grammar (and you will not find any terrible puns about where you might find her…oops).

Split infinitives, double negatives, disjunctive adverbs, unreconcilable second participles of the first part – most people don't even understand the names of the errors they are making, never mind the errors themselves. Your word-pro's spellchecker may notice that 'undoubtably' is not a real word, but it doesn't give a four-X if you start a sentence with 'But'.

PG tears apart last month's lead feature.



JARGON BUSTERS

- **DIALOGUE BOX – a Workbench-style requestor for text.**
- **ASCII – the 'vanilla' flavour of text file formats.**
- **UNDOUBTABLY – a word I have apparently been making up for the last 15 years.**

AH YES, BUT...

Well, now that we know the problem, its just a matter of solving it. Not so easy I'm afraid. In all my years in the business I've never come across a word processor with a grammar checker thrown in. These things do exist on the PC, but I think that's a bit of a desperate measure. What you need is a standalone grammar checker. And that is just what we have in the form of *Proper Grammar II.*

Quite simply it is an external grammar checker. A grammar checker works in exactly the same way as a spell-checker – it processes through the text and when it comes across something which it reckons is wrong it will question it.

The program does this by calling up a dialogue box, highlighting the questionable phrase and displaying the supposed error in an output window. You can correct the mistake or ignore it. If you choose to ignore, you are then given the option of turning that particular rule off for the remainder of the session or permanently. There are a great many rules, ranging from commonly confused words (like 'practice' and 'practise'), archaic expressions, double negatives, split infinitives, wordy expressions – virtually everything you can think of and then some.

ERROR

Proper Grammar will also check for spelling errors, which is actually a bit of a pain. If you use your word-pro's spell-checker it's tedious to have to update the 'user-dictionary' files on both programs. Fortunately you can turn this rule off. The spell-checker may be useful if your word-pro either doesn't have one, or if you didn't actually write the text yourself. You can enter text directly into the program, and cut and paste, but it lacks any more sophisticated options.

You can view the statistics of your writing which contains details on complex verb usage, reading age, sentence lengths and the overall reading index.

CONCLUSION

If your word processor has ARexx it will be a simple effort to write a script that automatically dumps your text into *Proper Grammar*. Even as a standalone program it is fairly simple to use. Its great strength is the ease with which it can be configured to suit any system.

The software is certainly powerful enough to pick up any lax literature and so should be on the 'must buy' list of anyone who is concerned with their text.

SOFTWOOD Inc £39.95

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A1500 ✓ A2000 ✓ A3000 ✓ A4000 ✓

GORDON HARWOOD COMPUTERS, NEW STREET, ALFRETON, DERBYSHIRE, DE55 7BP. TEL: 0773 836781.

EASE OF USE 89%
It is simple to run and the on-screen prompts clear up any doubts.

VALUE FOR MONEY 80%
Cheaper than buying a PC to do the job.

EFFECTIVENESS 86%
Seems to work fairly well. It is annoying having two dictionaries, but you can always spell-check on the word-pro and 'Ignore' that option in PG.

FLEXIBILITY 90%
Works with almost all major word-pro files, and there is always ASCII to fall back on.

INNOVATION 90%
It requires quite a lot of cunning to write software like this that actually works.

"An entertaining way to discover how terrible your writing really is."

OVERALL 87%





Scanning in black and white is reasonable enough. See how the detail towards the rear of this rubbish truck is picked out perfectly.



Curiously the software has elected to reproduce the image twice in this scan.

Migraph Colour Scanner

Is this the cheapest way to get colour graphics onto your screen? John Kennedy scans something entirely new – an 18-bit multi-colour scanner at a fraction of the price of the flatbeds.

Handy scanners may all look like devices for removing unwanted body hair, but they still represent the cheapest and easiest way of getting graphics out of the analogue real world and into a digital computer.

Of course, monochrome scanners have been with us for some time – steadily decreasing in price whilst simultaneously increasing in resolution. Scanners have even started to appear which feature true greyscale options, bypassing those dreadful dithering approaches and so leading to near-photographic results.

But to be honest, what we all really want is a way of capturing colour with the same ease, quality and above all cheapness offered by handy scanners.

JARGON BUSTERS

- DPI – Dots per inch, the more DPI, the higher the detail in the scanned image.
- Flatbed – Scanners which look like photocopiers and automatically scan the image. Usually work to very high resolutions (800DPI) and cost a bomb.
- HAM6 – The quirky 'hold-and-modify' method by which all Amigas can display up to 4096 different colours on-screen.
- HAM8 – The even quirkier way in which newer Amigas (A1200,A4000) can display up to 262,144 colours.

ENTER THE DRAG

At last the waiting is over! The first colour scanner to make it through the doors of CU Towers comes from the long-time producers of scanners, Migraph. Even better, it doesn't simply stop at colour; Migraph have gone so far as to equip the Colorburst scanner with a remarkable 18-bit option: that's 262,144 colours to you, mate.

In an attempt to make it stand out from the crowd of beige, the Migraph scanner is available in any colour you like, as long as it's black. Construction is on the fair to middling side of things, with rather indistinct switches to select scanning modes and resolution options. Apart from the novel colour, there is nothing external to suggest that this is no ordinary two-tone armpit-shaver, er... scanner.

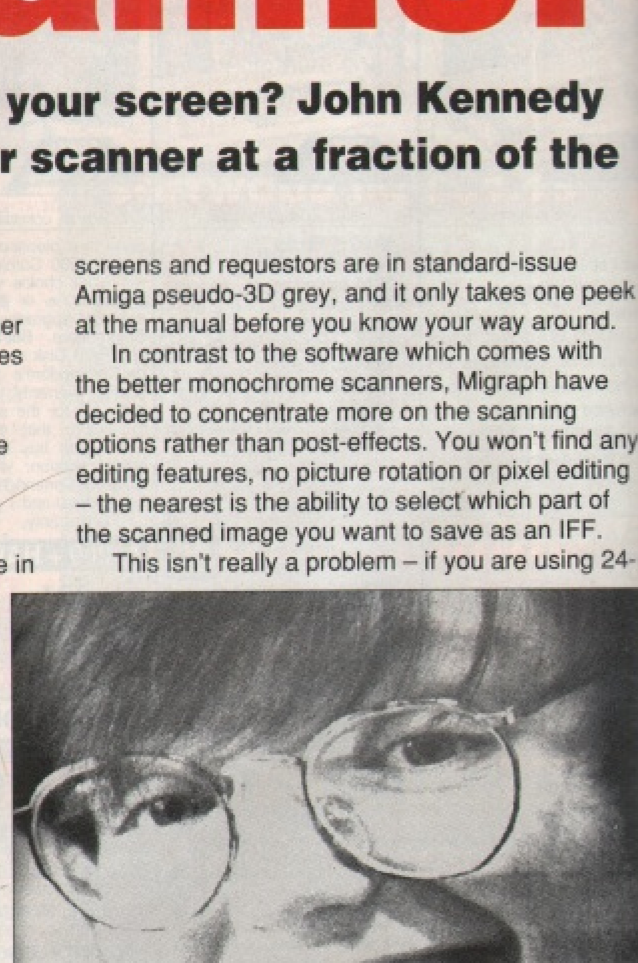
The scanner is connected to the Amiga via a match-box sized interface connected to the parallel port. No through port is provided, and apparently switching devices won't work either. However, as a form of compensation Migraph say that the interface can be inserted and removed without first disconnecting the Amiga's power... a very strange recommendation.

SOFTWARE

The software which drives the scanner is a very user friendly affair. All the option setting screens and requestors are in standard-issue Amiga pseudo-3D grey, and it only takes one peek at the manual before you know your way around.

In contrast to the software which comes with the better monochrome scanners, Migraph have decided to concentrate more on the scanning options rather than post-effects. You won't find any editing features, no picture rotation or pixel editing – the nearest is the ability to select which part of the scanned image you want to save as an IFF.

This isn't really a problem – if you are using 24-



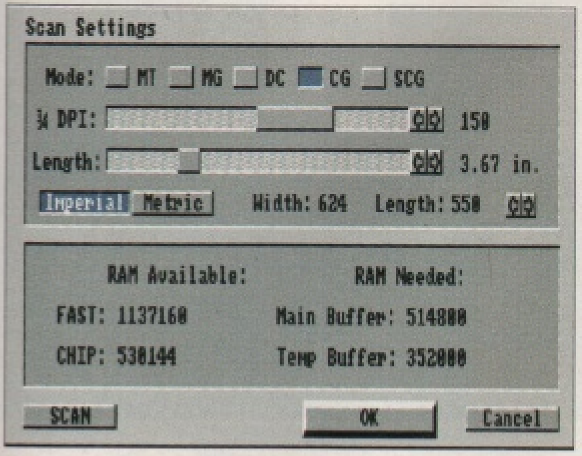
There are some nasty edging effects evident. The use of a scanning tray may reduce the problem somewhat.

RESOLUTIONS

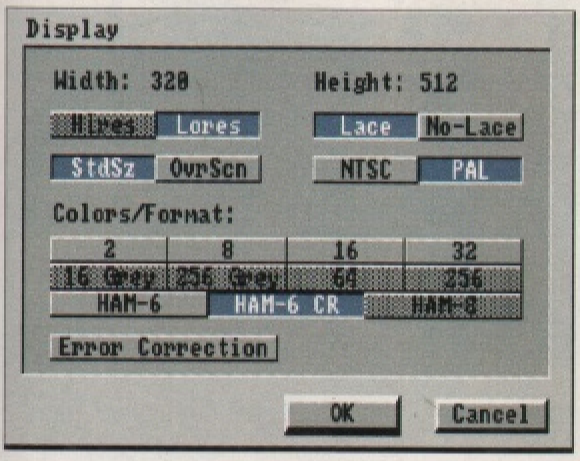
The resolution of the image, in dots per inch, changes depending on the mode the scanner is working in. A resolution of about 100 DPI will produce an image of approximately actual size on screen, 400 DPI a larger image and 50 DPI a smaller one.

For video and graphics work, 100 DPI seems to do fine, but for Desktop Publishing the better detail can make all the difference.

MODE:	Mono	GreyScales	Colour	SuperColor
Colours	2	64 greys	4096	262,144
Min Resolution	100	10050	50	
Max Resolution	400	400200	200	



At a mono resolution of 400dpi this unit competes with the best hand scanners on the market. Colour resolution goes up to 200dpi but the results can be dubious.



A fairly comprehensive selection of scanning modes are available, including AGA support for 256 colours and HAM8. Software wise the Migraph scanner is resonably competent.

bit graphics on anything more than a trivial basis you will already have invested in some software which can do a much better job – *Image FX*, *AdPro* or *ImageMaster* spring to mind. The memory that software would require in order to offer these features can be better used for scanning images into.

REQUIREMENTS

Memory is going to be a problem – at the very least you are going to need an Amiga with 2Mb of RAM, as is the case with the A1200, but you'll soon find that this is far from enough. Migraph recommend 4Mb and a harddrive, and this is a much more sensible minimum. Any extra memory fitted to the A1200 trapdoor will also speed-up the rather intensive processing that needs to be done to the scanned images before they can be displayed.



Colours don't always come out too well, but this may be due to the power supply.

That said, running on a bare 68000 CPU the time delay between scan and display wasn't unbearable, even for reasonably large images. On 68020 and higher machines the mean-time-to-display will only get better.

One of the features of the Colorburst scanner is the ability to scan in 262,144 colours – remarkably that's the same as offered by the new HAM8 mode available with the AGA chipset Amigas. The upshot is that those lucky enough to have the newer machines can get the full benefit of the pictures, and the rest of us will have to make do with normal HAM6 and 4096 colours. Of course, those using the colour scans for DTP or Image Processing will still benefit from the 18bit Super Color (sic.) mode even if they can't see the extra detail on their monitors.

IN USE

The hardest part about using the scanner is the waiting, and this is something that no amount of accelerator cards can change. In order to obtain consistent colour results, the miniature fluorescent tube inside the scanner must be allowed to warm up – a process which takes between two minutes and 30 seconds.

Once you've survived this ordeal, the actual scanning can begin. Guiding the scanner isn't difficult – it just requires a steady hand. It's best to go into it with a relaxed approach as trying too hard seems to have a detrimental effect.

As you move the scanner over the image, a rough equivalent is displayed on-screen. By watching this, you'll soon know if you are moving your hand too fast because all the faces will have become squashed vertically in a most amusing manner. It's well worth trying.

Once the scan is finished, you have to wait again for a short while as various numbers are crunched. In a few seconds everything stops, and you are back to the menu. Now the various display modes can be chosen to view the pictures, or they can be saved to disk. Saving in 24-bits is usually best, as this will preserve all the detail. For use in Deluxe Paint or the like, HAM or 32 colours will suffice.

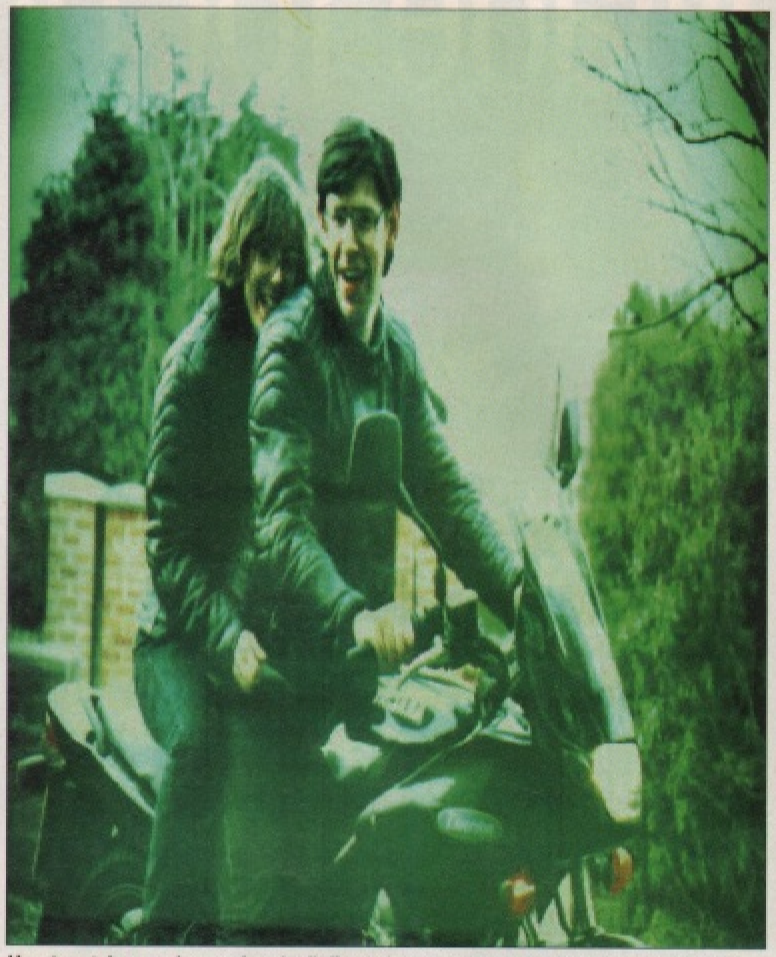
RESULTS

Scanning pictures from magazines can produce unexpected results, and not only from copyright lawyers. In the world of professional printing a 'screening' process is use, and when scanned at certain resolutions strange interference patters can appear.

For best results, take your own photograph and have it developed at Boots. The prints are just the right size for the scanner, and providing the picture has lots of bright colours and good contrast the results will be excellent. A good range of colours is possible, and these make up for slighter poorer resolution.

The current software has several bugs (such as occasionally saving double images), but as registered users will receive an immediate update this should cease to be a problem for long.

What the scanner lacks in the highest possible quality, it more than makes up for in ease of use and at this price, it has to be cheapest way of getting near true colour images into the Amiga. As a bonus, you also get 64 shade grey scale and extra-sharp monochrome modes – three scanners in one: how's that for value? CU



Unortunately even horrendously disfigured scans cannot be touched up using the supplied software. Nice bike though.

ALTERNATIVELY

There are other options when it comes to image scanning. More upmarket scanners such as the Epson GT6500/8000 (available from Power) offer unrivalled quality – at a price.

Smaller flatbed scanners such as the extra cute Sharp JX100 (Silica Systems) are well worth considering, as automating the entire process can lead to better results.

Finally, but only if you have access to a camcorder, video digitisers such as VIDI, SuperPic or Vlab are capable of instant results of very high quality.

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EASE OF USE 84%
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VALUE FOR MONEY 85%
Colour scanning at this price is unheard of.

EFFECTIVENESS 86%
Good image quality.

FLEXIBILITY 90%
Plenty of scan modes, resolutions and above all, uses.

INNOVATION 95%
The first 18-bit colour scanner we've seen.

"The easiest, cheapest and most colourful way yet to grab images."

OVERALL 88%

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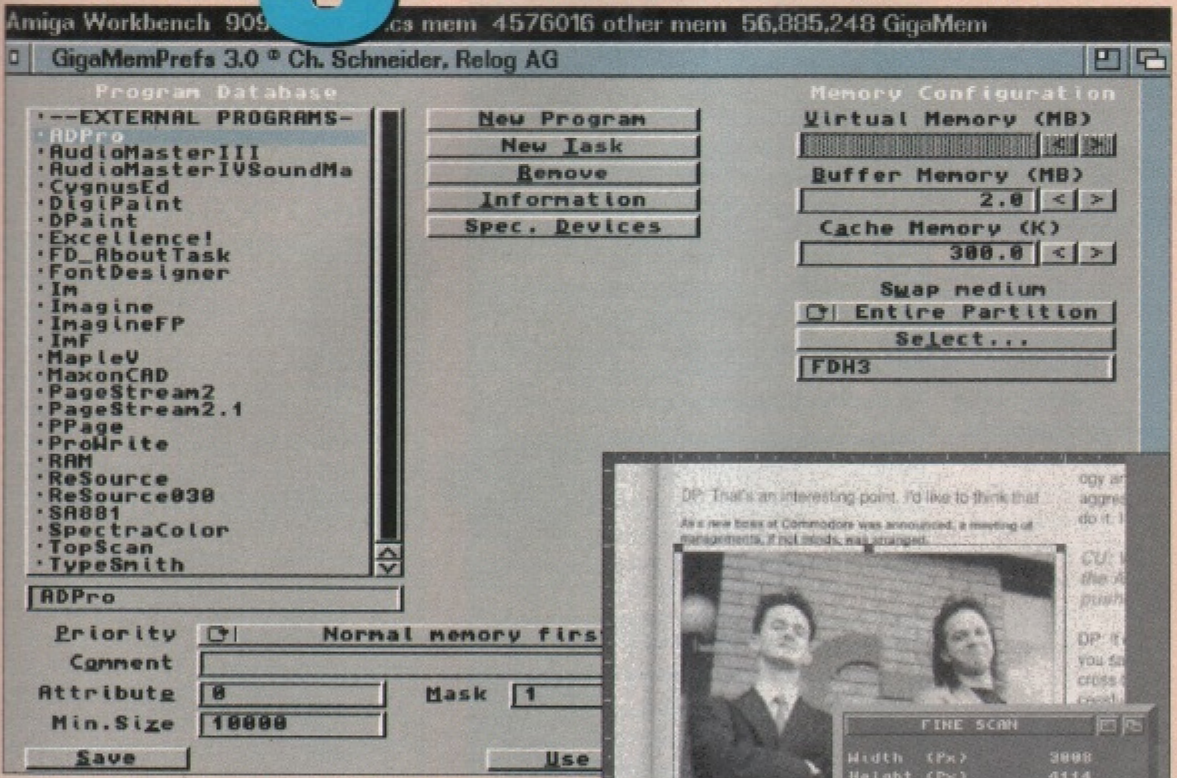
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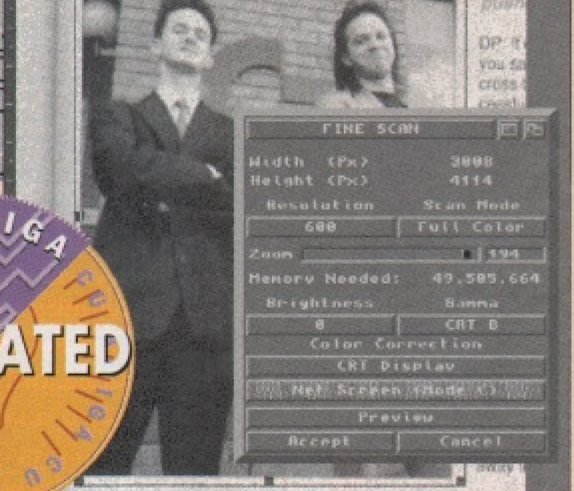
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Gigamem



Many of the major memory-munching programs are already set-up and ready to go with virtual memory. Look at the title bar – more than 60Mb of total memory available!



AdPro, due to its nature, often throws up out of memory messages. These can be virtually banished with *Gigamem*. Take a look at the 'Memory Needed' gadget in the Fine Scan requestor. The fact that 49,505,664 is displayed in white instead of black means that this 24-bit colour scan can be scanned to memory and displayed instead of having to scan it blindly direct to disk.

Jeff Walker has found an escape from reality – if only he can remember where it is...

I've got 50Mb of memory in my Amiga. Hang on a tick ... 10 seconds later and I've got 100Mb of memory in my Amiga. Don't believe me? It's true, I swear. Well, virtually true.

The concept of virtual memory is simple. When installed, if a program runs out of 'real' memory – the memory on the little black chips, which are just one kind of 'storage device' – the program starts to use another kind of storage device. This could be floppy disk, hard disk, removable hard disk, writeable compact disc or whatever, but plainly it makes sense to use the fastest disk storage device available in order to keep the program or programs running as quickly as possible. So that means a hard disk is best.

And, of course, if you want to make large amounts of virtual memory available, then you need to have plenty of spare room on the hard disk. So this means a fairly large hard disk.

INSTALLATION

Before installing *Gigamem* you have to decide whether you want to give it a whole partition to use as virtual memory, or whether it should use a very large 'swap file' on one of your existing partitions. Giving it a whole partition is by far the best option, mainly because this speeds up the access times to virtual memory. There is only one advantage to using a swap file – you can change its size at any time.

Once the hard drive is ready, installing and configuring *Gigamem* is painless. After the standard Commodore installer has copied everything across, running the GigamemPrefs program opens a window that contains a pre-defined list of programs that are known to work with *Gigamem*.

You can add to this list yourself, but not every program will work with the default settings unless you choose the Advanced option from a menu.

WHAT WORKS?

I was disappointed to find that I couldn't get *PageStream 2.2UK* to use virtual memory, nor the *Touch-Up* or *Powerscan* scanning software. But *TypeSmith* worked straight off, and so did *ProPage 4* and *Protext 5.5*. *Wordworth* and *Final Copy II*, two programs that would benefit a lot from virtual memory, wouldn't use it.

A cycle button enables you to instruct each program in the *Gigamem* list to use virtual memory first, normal memory first, only virtual memory, or no virtual memory.

Tasks that are already running can be added to the virtual memory list. Sometimes a program may use a different name for the filename and the task name, and in these cases the program won't work with *Gigamem* unless the actual task name is added to the list. This is probably the first thing to check when you can't get a program to use virtual memory.

To help speed-up the access time to virtual memory, *Gigamem* enables you to set a buffer so that a portion of the virtual memory can be kept in RAM. The bigger this buffer, the faster virtual memory will work. *Gigamem's* swap partition uses its own non-standard filing system, and the preferences programs enables you to set a cache figure which will speed up access times to that partition.

The system will work with any Amiga provided it is fitted with a memory management unit (MMU). The 68000 chip in the A500-2000, the 68EC020 chip in the A1200 and the 68EC030 chip in the A4000/030 cannot have MMUs fitted and so will not work with *Gigamem* unless an accelerator board is fitted that has a full 680x0 chip and MMU on board. Thankfully there are no restrictions on what hard drive controllers and disks can be used. The maximum size of virtual memory that can be used is 1Gb, which is 1000Mb.

CONCLUSION

It really is a very simple program to use. If you regularly get 'out of memory' messages, and you own an Amiga that has an MMU and a hard drive, then I can't think of one good reason why you shouldn't rush out and buy *Gigamem* today.

COMPATIBILITY

Strictly speaking, the compatibility details in the score box are true, but they are very misleading indeed. As we have said, *Gigamem* will work on any Amiga provided it is fitted with an MMU, which essentially means any Amiga fitted with a decent accelerator board.

Note that *Gigamem* will not work on the 4000/030 as it comes, and the 68EC030 chip in that machine cannot be swapped for the full 68030, so no MMU can be fitted without buying an '040 board for it.

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EASE OF USE ♦♦♦♦♦♦♦♦♦♦ 80%
Adding programs to the list of applications that should use virtual memory is simple enough. The advanced options, however, require a bit too much intimacy with anoraks.

VALUE FOR MONEY ♦♦♦♦♦♦♦♦♦♦ 100%
Compared to the price of 'real' memory, Gigamem's virtual memory is virtually free.

EFFECTIVENESS ♦♦♦♦♦♦♦♦♦♦ 89%
But when you come across a program that doesn't want to work with virtual memory there are no clues as to why it won't work or how you can make it work.

FLEXIBILITY ♦♦♦♦♦♦♦♦♦♦ 92%
Plenty of options enable you to configure the virtual memory to work as fast as possible.

INNOVATION ♦♦♦♦♦♦♦♦♦♦ 100%
Virtual memory is nothing new, but Gigamem is the first fully working VM system available for AmigaDOS.

> *If you've got an MMU and a hard drive you'd be a fool not to invest in Gigamem.*

OVERALL 91%

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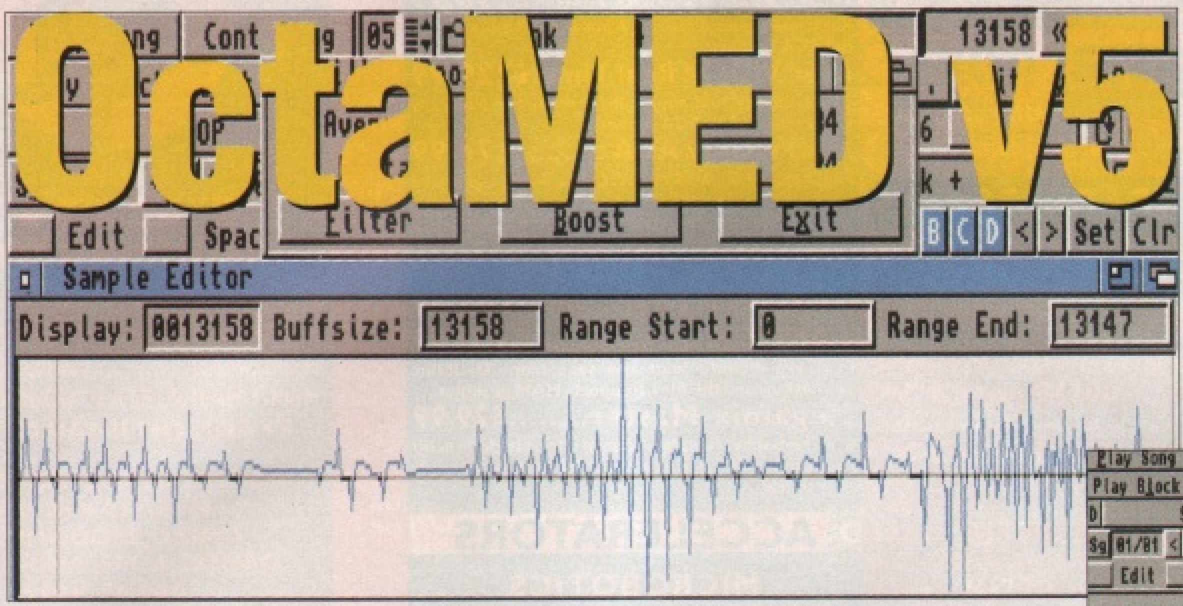
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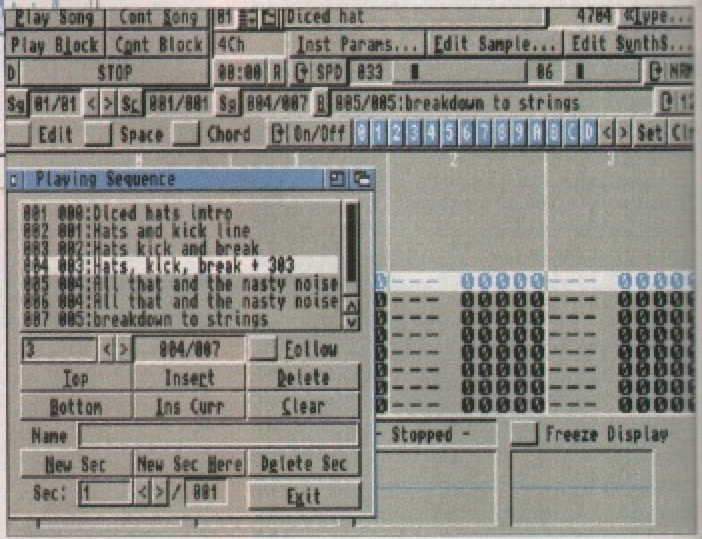
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OctaMED v5



It started as a simple *Soundtracker* clone, but soon grew into something far bigger. Tony Horgan makes some noise with Version 5.



OctaMED V5 now sports standard menus and windows, with a truckload of other improvements.

As you can see, the biggest difference with the latest version of *OctaMED* is the user interface, and the fact that it needs Kickstart 2.04 or higher. The old *OctaMED* system was starting to get a bit untidy, with lots of little boxes all over the place, and no particular form to the whole thing. All of that has gone out of the window, in favour of a far more approachable system of menus and standard windows. If all that sounds a bit daunting, don't worry, because all the old keyboard shortcuts are still there, and the top panel has retained most of the important buttons.

Rather than stacks of new commands and effects, a good deal of the changes are there to make your life easier. The interface, for example, is a bit of a trial at first if you're used to an old version, but after a while it's much easier to get around the program. In previous versions, it was easy to miss out on some of the features, simply because you hadn't noticed some of the little buttons. Now all you need to do is pull down a menu and peruse all those lovely features.

In terms of power, the biggest new feature is the step up to 64 MIDI tracks. This is a giant leap forward from the maximum 16 tracks of previous releases. It's still limited to four channels of normal Amiga samples, and up to eight channels of lower grade samples, but if you've got some MIDI gear, now you can really make the most of it.

DSP SUPPORT?

The short answer is no, there isn't any DSP support. Programmer Teijo Kinnunen has written some preliminary playback routines, but they've not been implemented in this version (partly because exact details of the chip still haven't been finalised). Unfortunately, Teijo has just started his compulsory national service, so we won't see any further updates for at least 18 months.

One problem with previous versions is that when you look at the playlist, all you see is a string of numbers. Finding your way around the list could be tricky, but not any more. Now you can give each block a name or a string of text, which describes what's happening in that block. If you take a look through the playlist, you can then pick out the section you're after.

SAMPLER EFFECTS

The built-in sampler and sample editor have had a few changes for the better. There aren't any new effects, but you've now got a lot more control over the existing ones. The pitch changer has optional anti-aliasing, the volume boost has an optional 100 per cent limiter to avoid distortion, the filter has a further adjustable parameter, and the mix function allows you to alter the relative volumes of the two sounds. There's a menu item that automatically removes unused space from the start or end of a sample, and the loop controls are easier to use.

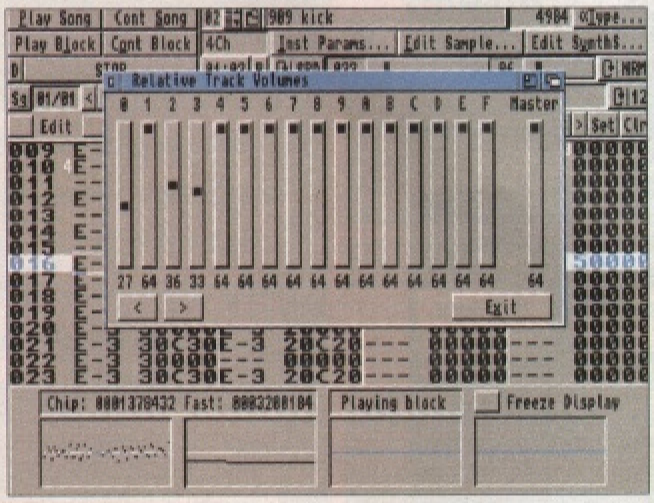
If you use a TV and more than four tracks, you'll be pleased to know that you can now switch the maximum number of on-screen tracks to 4, 8 or 16, instead of being forced to squint at the tiny text in 8 column mode.

CONCLUSION

It's a shame that anyone using a 1.3 Amiga will miss out on all of this, but that's progress I suppose. I've just got to get a 1200 now! Has anyone got a few hundred quid spare? The other disappointment is that when Commodore's DSP does materialise, it looks as if we'll have a long wait before we can use it with *OctaMED*.

Apart from that, this is an excellent upgrade. After only a couple of sessions, you'll be flying around it with ease. The menus, windows and sliders mean that you can start experimenting right from the start. There are plenty of new features to keep you interested, and herds of little short-cuts that make it so much easier to use. *OctaMED* was already by far the best MIDI and sample sequencer about – now it's even better.

Extensive use is made of Kickstart 2, with the side effect that 1.3 owners will have to go without or upgrade their machines.



UPGRADES

If you're still using the *OctaMED V3* we gave away as a coverdisk last year, you qualify for a reduced rate upgrade offer. Send your coverdisk to 169 Dale Valley Road, Hollybrook, Southampton, SO1 6QX, along with a cheque or postal order for £24, made payable to S Burt Frost. The disk must be an original CU Amiga V3 OctaMED coverdisk. V5 will be copied onto the disk and returned to you.

NEW FEATURES

There are loads of new features and alterations since version 3 and 4. Here are some of the main updates.

- Kickstart 2+ only
- 64 MIDI tracks
- On-line hypertext instructions
- menu-driven interface
- named blocks
- redefinable keys and mouse buttons
- generic slide function
- improved control over sample editor effects
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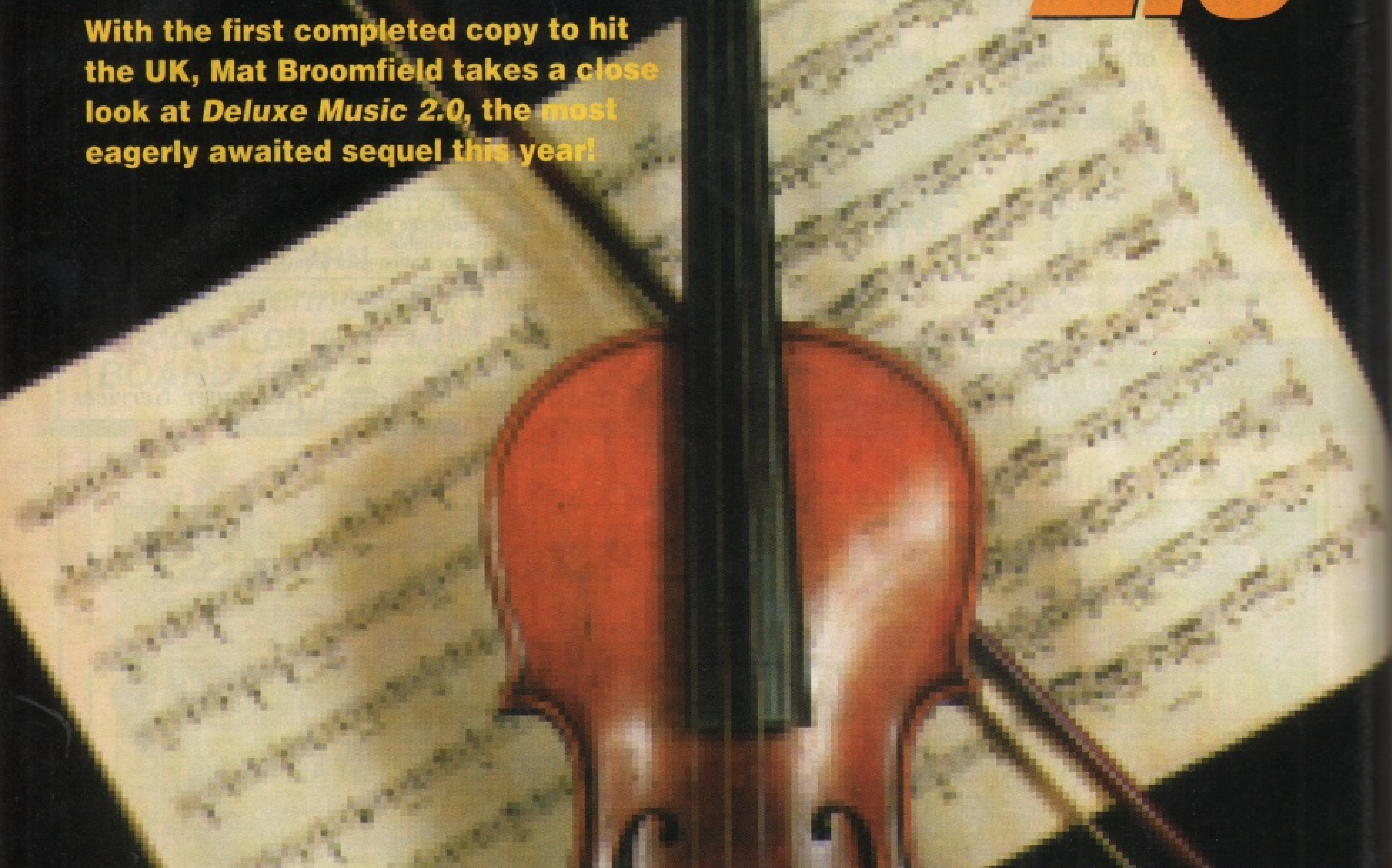
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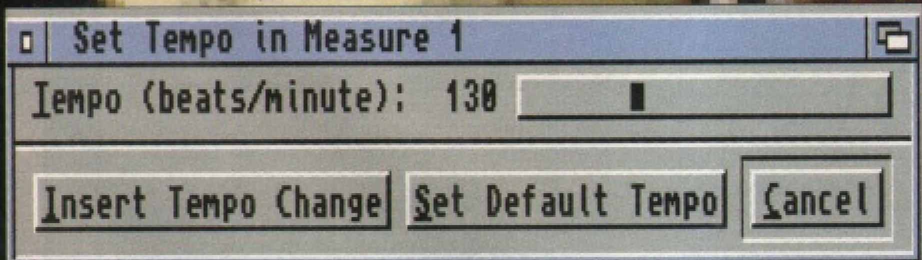
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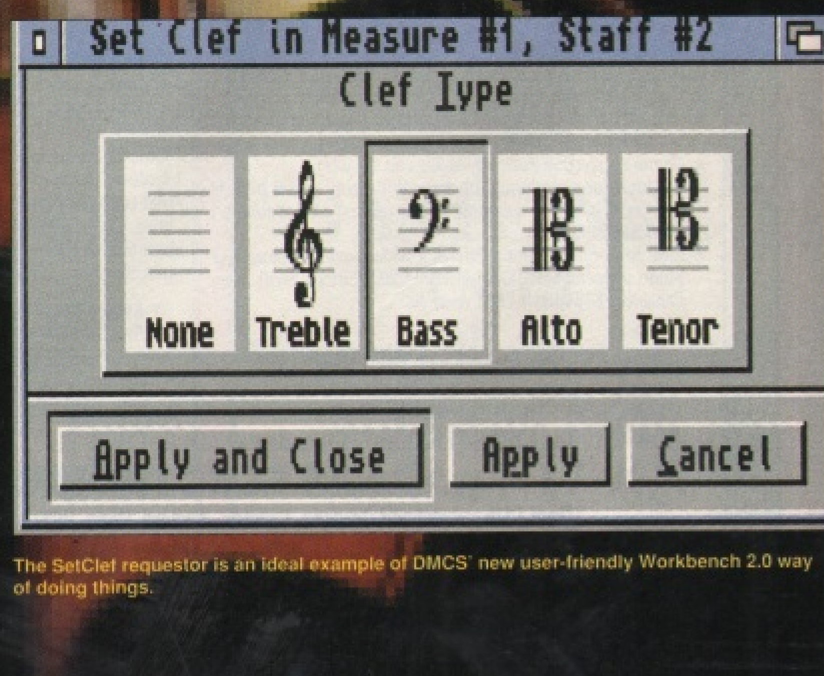
Deluxe Music CONSTRUCTION SET 2.0

With the first completed copy to hit the UK, Mat Broomfield takes a close look at *Deluxe Music 2.0*, the most eagerly awaited sequel this year!





Set the Tempo for a section of a song, or alter the overall default. Songs loaded from version 1.0 will all play too fast so be prepared to make adjustments.



The SetClef requestor is an ideal example of DMCS' new user-friendly Workbench 2.0 way of doing things.

Electronic Arts describe *Deluxe Music Construction Set 2.0* (DMCS) as the musical equivalent of a word processor, turning your computer into a desktop music publishing studio. In the same way as a word processor allows an author to quickly record and manipulate literary ideas, *DMCS* lets a composer do the same for musical ideas. However, the analogy falls down in one important area. To find out more let's take a look at the program...

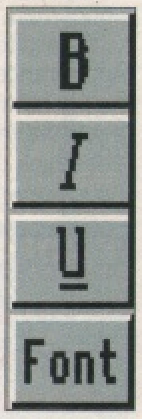
QUATRO SCREENIO

When you initially load *DMCS*, the screen is divided into four areas. Running along the top is the menu bar containing eight menus. At the left of the screen is a tool window whose contents change according to your requirements. However, most of the time this window will hold the actual notes that you will use to create a score. At the bottom of the screen, there's a keyboard window containing, surprise surprise, a keyboard! This can also be used to enter notes, either singly or as part of a chord. The main and central part of the screen is occupied by the score window. This is the place where your score will appear as you create it.

Before you start to create a score, you can use the options in the Settings menu to tailor the environment to your own personal tastes or requirements. This menu contains options such as whether or not to highlight notes when a score is being replayed, and what kind of MIDI set up, if any, you are using. If, like me, you tend to stick with a single configuration, you can save your preferences for future use.

STAVING OFF THE INEVITABLE

A new score consists of only two staves denoted by a treble and bass clef (which can be changed to tenor or alto clefs if needed). In the original version of the program, you could only add a further six staves, bringing the total to eight. This meant that the program was fine for creating tunes that only used the Amiga's four internal sound channels, but when it came to MIDI use, it was very restricting. Thankfully, the program now permits the use of up to 48 staves – more than enough for the most dedicated MIDI composer, even one composing for an entire orchestra! If you do find yourself working on a score that uses more than four staves, you'll soon come to wish as I do, that the programmers had thought to number each stave and each bar,



You can even add lyrics and guitar tablature messages to your score.



The program supports the full range of dynamics, it's just a pity that their actual volume isn't user-definable.

regardless of the part of the score that you are editing. The bars are numbered but only at the bottom of the page, so if you are working at the top of a 24 stave page, you'll have to keep scrolling to the bottom to see which bar you're working on. The individual staves are not numbered at all, so it can be pure guesswork to figure out which one you're actually working on, especially as you get further and further away from the start of a score.

By default, staves are given a time signature of 4/4 (common time) and a key signature of C major. If you need to change these settings, you may do so using the appropriate menu options. The time Signature option now supports only 64 beats per bar (measure) as opposed to version 1's 99. However, the beat duration has been increased from 16 to 64. For most average compositions, time signatures above 12/16 will be rare.

When it comes to setting the key signature of your music, you'll need to select the appropriate key from a scale wheel known as the 'circle of fifths'. For people who understand music theory, the circle of fifths lets you specify a key in either a major or minor key, and existing music can be transposed into the new key. For inexperienced musicians, the anti-clockwise segments of the circle add flat symbols to the key and clockwise segments add sharp ones.

REQUEST STOP

Having set the clef, key and time signatures, you're ready to begin entering notes. Click the note icon in the tool window and select the required note from the note palette below. Users of the original program will notice that there are two additional notes available – 64ths (hemidemisemiquavers) and double notes (breves). Although the breves aren't particularly useful, the 64th notes are invaluable, both for classical and electronic styles.

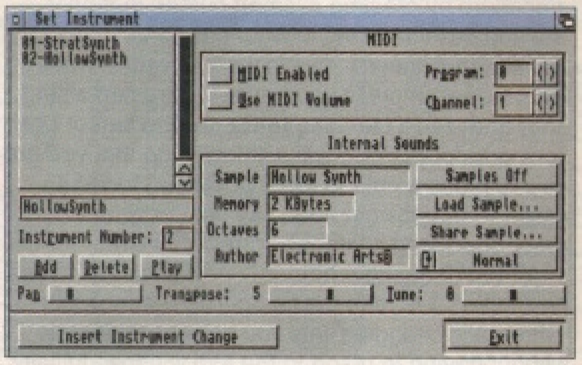
When you've selected a note, there are three types of modifiers that can be applied to it before it's positioned in the score – tuplets, dots and accidentals. Tuplets (triplets, quintuplets and septuplets) decrease the duration of the note. For example, suppose a triplet is added to a quaver, it reduces its duration by one third. The addition of septuplets (which reduces the duration of a note by a seventh) is very handy for classical musicians. Dots increase the duration of notes. A single dot increases it by 50 percent, whereas two dots (a double-dot) increases it by 75 per cent. The latter

INFLEXIBLE VOLUME

DMCS provides a full range of dynamics (volume settings) ranging from PPP (very softly) to FFF (very loud). These are difficult to position accurately, and although the instruction manual is voluminous, a great many specific details are notable by their absence. Control of dynamics is doubly irritating when used with a MIDI instrument because you cannot pre-define EXACTLY what volume level PPP, MF or FFF should represent. Therefore PPP is not audible with my synth when any other notes are playing.

Two of the more important menu options are Tie Up/Down which is used to join two notes together so that a single note plays for their combined duration, and Slur Up/Down, which tells the computer to play all selected notes legato, creating seamless transitions from one note to another (depending upon the instrument being used of course). Both options appear as curved lines between a group of notes, and in *DMCS 1.0* were rather bug-ridden both in their articulation and the way that they appeared on the screen. These have been debugged so that they look and sound as they should.

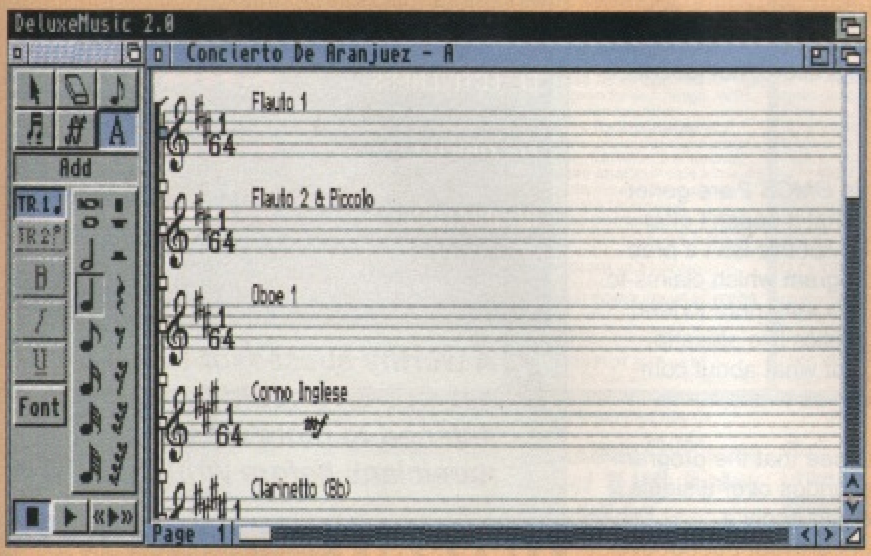
is another new option that will find favour with classical musicians. The final modifiers – accidentals – change the pitch of a note outside of the current key signature. For example, in the key of C major there are no sharp or flat notes. Therefore, any which occur are known as accidental and must be specifically added. Regrettably, the programmers



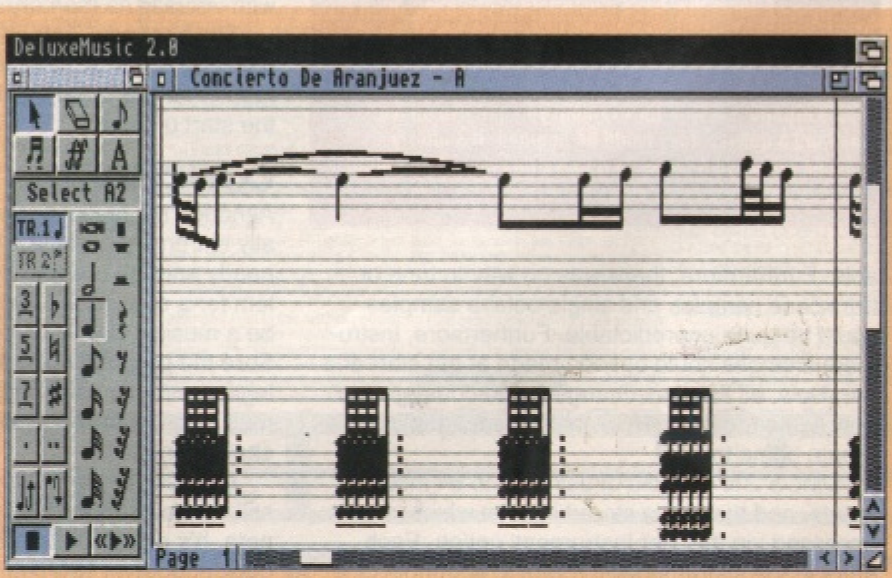
By far the most significant improvement is in the way that *DMCS 2.0* handles instruments. Everything from 1-7 octave samples as well as MIDI and even *One Stop Music Shop* is supported. You can set the stereo position of your sounds, and samples can be tuned and transposed with 100th of a semi-tone precision.

didn't take this opportunity to provide double sharps and flats, which would really have been nice as it's currently impossible to create chords that include sharpened and natural versions of the same note.

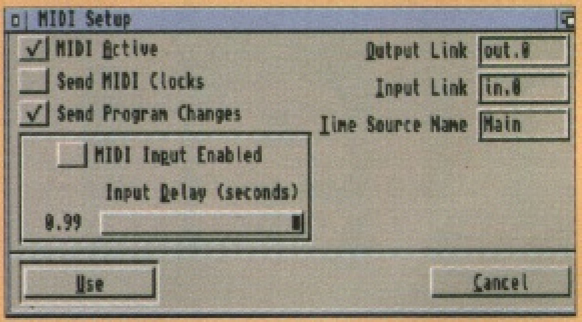
Having chosen a note and any modifiers, all that remains is to position it on the score by moving the cursor (which has now turned into the selected note) to the required stave and clicking the mouse button. Here again, the new version of *DMCS* has been improved. In the old version the »



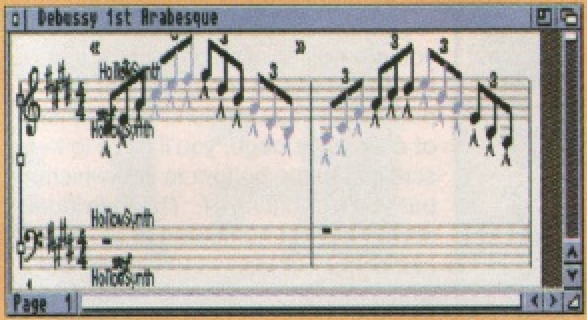
Instruments can now be set at any point in a score, not just at the start of a bar.



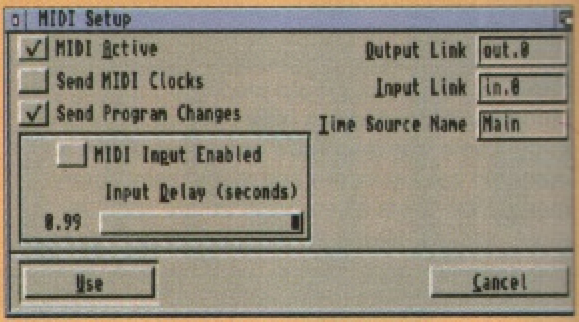
With support for up to 48 staves, DMCS can cope with the most demanding compositional requirements.



The program supports MIDI input, but despite initial plans, it cannot support real-time entry after all.



No longer must you define groups of adjacent notes. Only those that you want to be part of a group need be included.



This is how the program looks when you initially load it, although you can customise it to your requirements.

» cursor could be moved up and down the staff pixel by pixel which, whilst producing lovely smooth animation (!), could mean that you sometimes put a note down on a line when you meant to do it on a space or vice versa. Version 2 overcomes that problem by only allowing the cursor to appear exactly on lines or spaces. Another new feature is the cursor position/action indicator. This small read-out simply displays the cursor's current note position and the action that will be performed if you click the left mouse button.

SMARTY PANTS

Electronic Arts have further refined the note entry procedure by creating a 'smart cursor' that only lets you position notes in legal positions. In my opinion, this doesn't always work to your advantage. For example, if you have a chord containing an A and a C, it can take really precise cursor positioning before *DMCS* will acknowledge that you are able to place a note in the B position. I found it easier to put down a note, say half an octave away, then drag it into the correct position.

When dragging a note to a new pitch (or indeed positioning a note in the first place) a new option 'Chromatic Dragging' lets you select accidentals without having to resort to the tool window. Initially I was very keen on this option, but after a while it simply became confusing, counteracting the benefits of the new way of positioning notes. Nevertheless, when composing music, especially when you've not decided on a key signature, this option is invaluable.

BRAVO

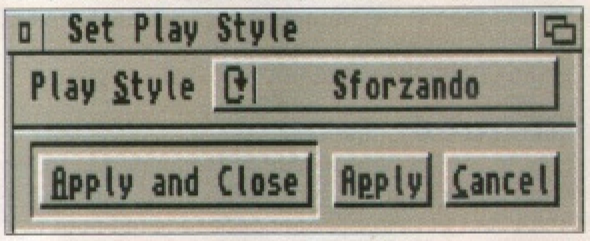
The program's handling of samples has been improved beyond all recognition. In the old program, no consideration was made for the stereo nature of the Amiga, and this meant that sounds just blurted out of whichever channel was available. Furthermore, there was no way to tune or transpose samples and single octave samples could be quite unpredictable. Furthermore, instrument changes could only be made at the start of a bar. Now, all that has changed, and compared to how it used to be, *DMCS'* instrument handling is a dream come true!

ALAS POOR YORICK!

When I saw the incomplete version of *DMCS 2.0*, it featured a couple of items that have mysteriously disappeared in the final version. The colour scheme is an example of the less important changes. However, one absence which worked perfectly in the preview is the ability to beam groups of notes around a rest, if for example you had two quavers, a rest and a quaver, they could be beamed. It's utterly beyond me why EA chose to remove this important option when it was already working.

DMCS 2 is capable of using up to 64 instruments, and these are stored in a list which is accessed via the 'Set Instrument' option. Each entry in the instrument list refers to a sample or a MIDI instrument. This means that you could create an instrument called 'Lead' which actually refers to a sample called 'Stratocaster'. Alternatively 'Lead' could just as easily refer to MIDI instrument number 30. This means that you can insert instrument changes in a song, then specify the exact instruments to be used at your leisure. *DMCS 2* can handle samples consisting of 1-7 octaves and these can be transposed in semi-tones and tuned in 100ths of a semi-tone. Although MIDI instruments can't be tuned, they can be transposed.

Each instrument can be assigned a stereo position using the pan slider. If it's a MIDI instrument, then you can specify the position in steps of 1.4 degrees. If you're using a sample then obviously you can only specify whether the sound will appear from the left or right channel using a system known as 'preferred pan'. This means that if two samples are already playing out of your preferred channel, the instrument will play from the other side. Strangely, although the Transpose and Tune sliders have digits to show exactly how much a sample has been tuned/transposed by, the pan slider has no such quantitative indicator so any settings will have to be made by ear.



You can add a playstyle (such as slow attack or echo) to a specific note, or directly to an instrument.

SHARE SAMPLE

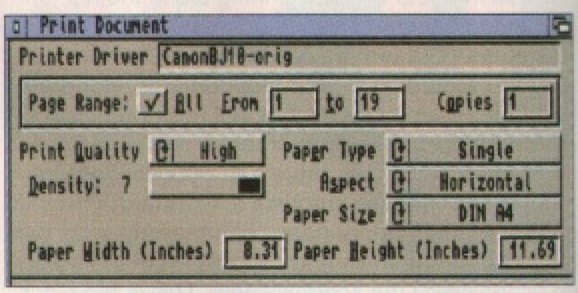
Share sample is an excellent new instrument option that lets two different instrument names share the same sample rather than wasting memory loading the same sound twice. This is useful because it means that you can create for example, a left and right channel version of the same sample with virtually no memory overhead.

The best new instrument feature of all in this package is the fact that you can now insert instrument changes at any point in a score, not just at the start of a bar.

CONCLUSION

Although my feelings towards *DMCS 2* are generally extremely positive, I feel that it doesn't offer nearly enough ornaments. Whilst this isn't a problem for a sequencer, for a program which claims to be a musical DTP package, it's very poor indeed. Sure the program supports basics like stacatto, legato and even sforzando, but what about common classical ornaments such as twists, turns, shakes and trills?

It's also very annoying to see that the program still doesn't support de/crescendos over a single note. It's ridiculous that one can apply a crescendo over two tied semi-breves, but not over a single breve.



The program's print routines are vastly improved, if only clefs, key and time signatures weren't duplicated at the start of EVERY single printed bar!

The printing section is vastly improved and even offers high and low quality print-outs (although they both seemed equally slow, and of equally high quality to me). The print resolution is much higher than previously, and can genuinely claim to be of near-DTP quality. The only irksome thing in this regard is the way that the program insists on printing the clef, key and time signatures at the start of every printed bar, even when printing four bars per line. This tends to detract from the professionalism of the finished result as far as I'm concerned.

Overall, I'm greatly heartened to see the appearance of *Deluxe Music 2* and it will definitely be my notation package of choice. It's far and away the friendliest package of its type. By version 2.2 I think that Electronic Arts are really going to have something to brag about... CU

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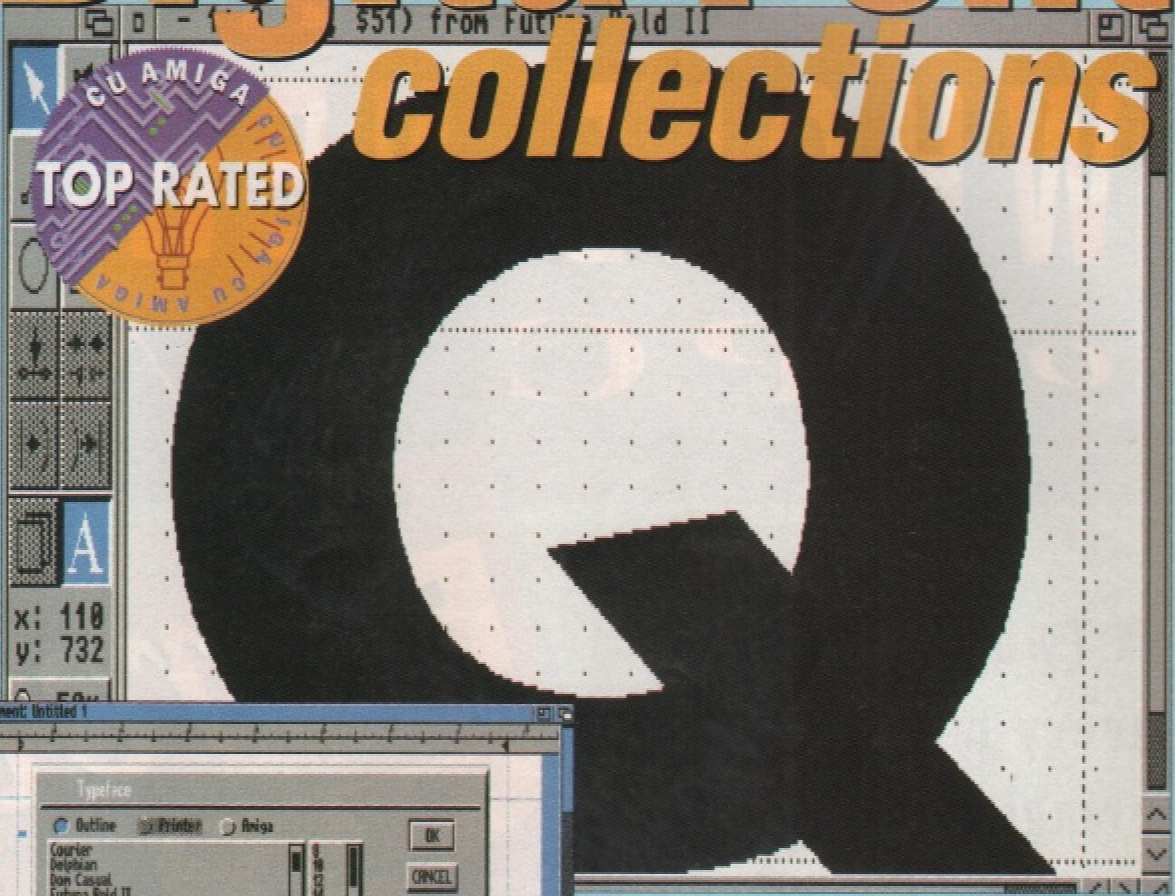
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Digita Font collections

Does anyone need 50 new fonts? Of course they do, as Nick Veitch discovers.



There are few experiences quite like your first time with a printer. The noxious gases escaping from your print head seem like a fragrant reminder of the pioneering spirit of Caxton. Was anyone ever unaffected by witnessing the transmission of data to the printed page for the first time?

But after a few sheets of A4 have shunted their way past the rollers you begin to notice how jaggy the fonts are and how you could probably have done better with a bottle of Quink and a Jersey Royal.

Well, with the advent of scaleable fonts, fewer and fewer people will be having that character forming experience. A scaleable font never lets you down. It is always in the correct proportion, its straights are straight, its curves are curvy.

The AGFA Compugraphic font standard has been adopted by Commodore from Workbench 2.0 upwards. This means that everyone has access to at least two scaleable fonts from Workbench, as well as the usual range of bitmapped fonts. These fonts automatically create bitmaps of the relevant size when requested to by an application. This is all very well for applications like *DPaint* and other packages where the results are only seen on the screen, but for printing slightly better control is required.

THE SAME BUT DIFFERENT

The difference is that a screen resolution font is manufactured at a resolution of 72dpi, which looks great on screen. Translate one of these fonts to a 300dpi printer like a LaserJet, or even a 120dpi printer like a Citizen 120D and you will see that what looked good on the screen doesn't look so nice in the real world.

Having proper fonts isn't enough though – you need software which can intelligently render them at the correct size for output. All DTP packages can do this, including *Pagesetter 2*, but a number of word processors are capable of it too.

One of these is *Wordworth*, and its creators have decided to maximise this potential by coming out with a range of Compugraphic fonts designed for the average wordpro user.

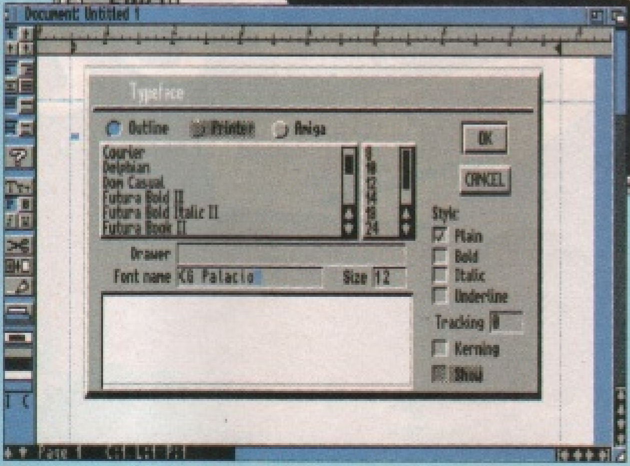
THE PACKS

The first of the packs, the Classic Collection contains some fonts which may be known elsewhere, the Goudys and the Futuras, but the average user may not have come across many of them before. The complete list is: Agfa Nadienne Medium, Goudy Oldstyle, Goudy Oldstyle Italic, Goudy Bold, Goudy Extrabold, Coronet, Delphian, Dom Casual, Futura BookII, Futura Book italic II, Futura Bold II, Futura Bold Italic II, Garamond Antiqua, Garamond Kursiv, Gill Sans, Letraset University Roman, Lisbon Cursive, Marigold, Microstyle, Microstyle extended, Peignot Demibold and three symbol fonts. At £39.99 that works out at a little under £1.60 per font – not bad considering the quality of the merchandise.

The Pride and Presentation pack has only 20 fonts: Antique Olive Compact, Branding Iron, Broadway, Brush, Carmine Tango, Poster Bodoni, Hobo medium, Murray Bold, Old English, Revue Shadow, Shannon Book, Thunderbird Extra Condensed, Times New Roman, Times New Roman Italic, Times New Roman Bold, Times New Roman Bold Italic, Uncial and a few symbol fonts.

The Reference Library contains 50 fonts, the popular ones from the other two sets, such as the Futuras and Nadiennes, as well as a few other families such as Avant Garde, Clarendon, and Univers.

The most curious aspect of the software is that the installer program asks to locate *Wordworth*. It is possible to use these fonts with other programs, but unless you really understand scaleable fonts and the Amiga, the instructions and software supplied are not going to help you out.



You can truly admire the quality of the faces in Typesmith – and convert them to other formats too.
Wordworth supports all the fonts directly.

CONCLUSION

The fonts are authentic Agfa fonts. You may not know the difference between a proper font which has been designed according to the standards and a lot of the CG format fonts which are going around the PD circuit and appearing in unofficial collections. Next time you load a PD font into *ProPage* and discover that the baselines are all screwed up it may not be the result of a notorious *ProPage* bug… it may be that the font you think is CG standard bends the rules too much. This isn't true of all PD or third party fonts, but it's a problem which often crops up. AGFA fonts do conform to the standard and programs which make use of them will have no problems.

JARGON BUSTERS

- **Dpi – Dots per inch. This is a method of measuring output resolution – the larger the number the better the result.**
- **CG fonts – Compugraphic fonts, licensed by AGFA, is one of a number of scaleable font formats. The most notable alternative is the Adobe Font standard.**
- **Family – a collection of fonts which all share inherent characteristics. E.g. Futura, Futura Bold and Futura Oblique are part of the Futura family.**

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EASE OF USE	75%
Easy to install but no instructions on how to use these fonts with other programs.	
VALUE FOR MONEY	80%
Not bargain bucket, but these are top-quality products.	
EFFECTIVENESS	95%
As you would expect from industry standard AGFA fonts, they are well designed and function properly	
FLEXIBILITY	80%
Even if you own WWorth and Propage, some fiddling about is necessary to get the fonts to work with both packages.	
INNOVATION	72%
From the point of view of compiling sets, these fonts have been bundled with care.	

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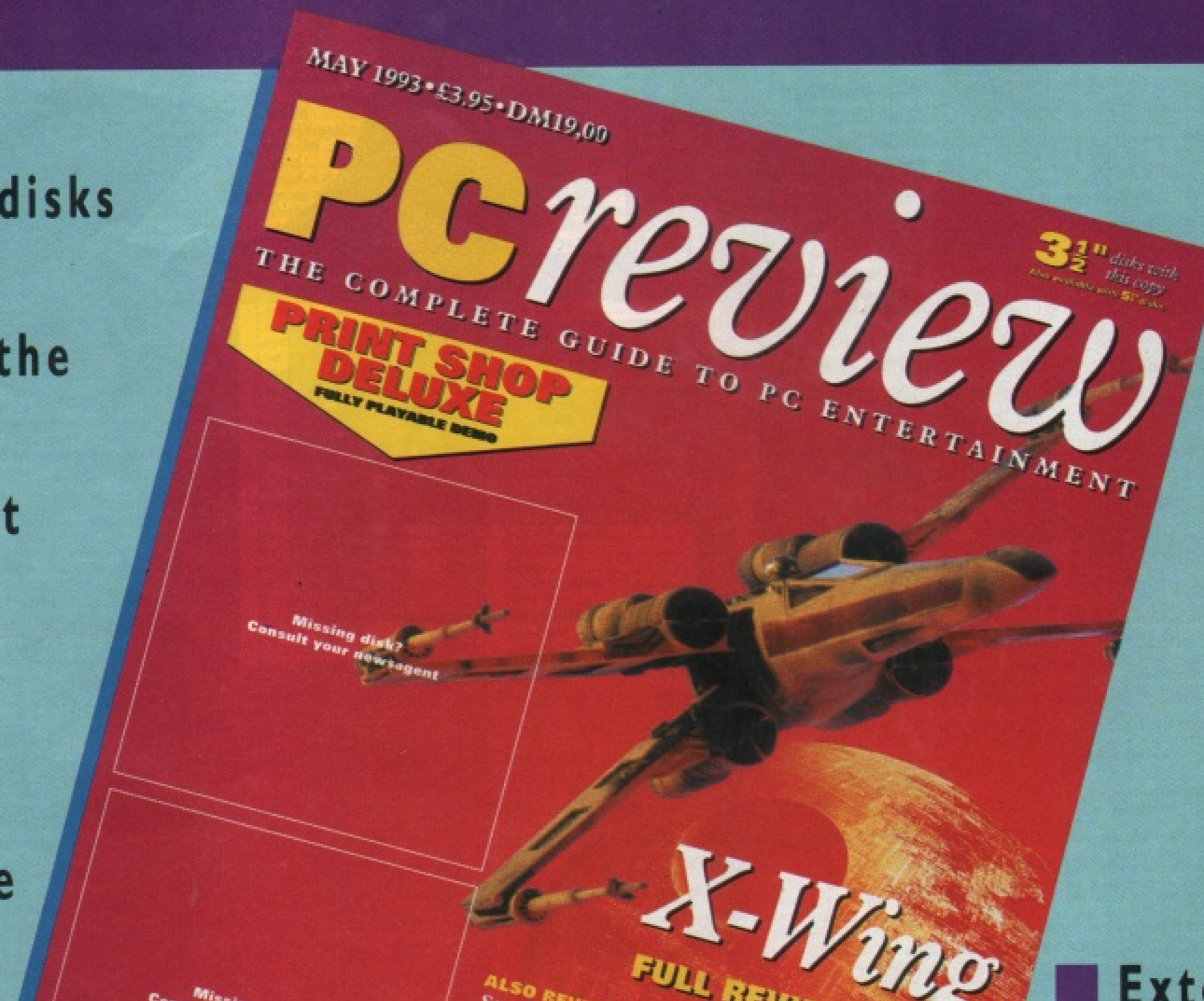
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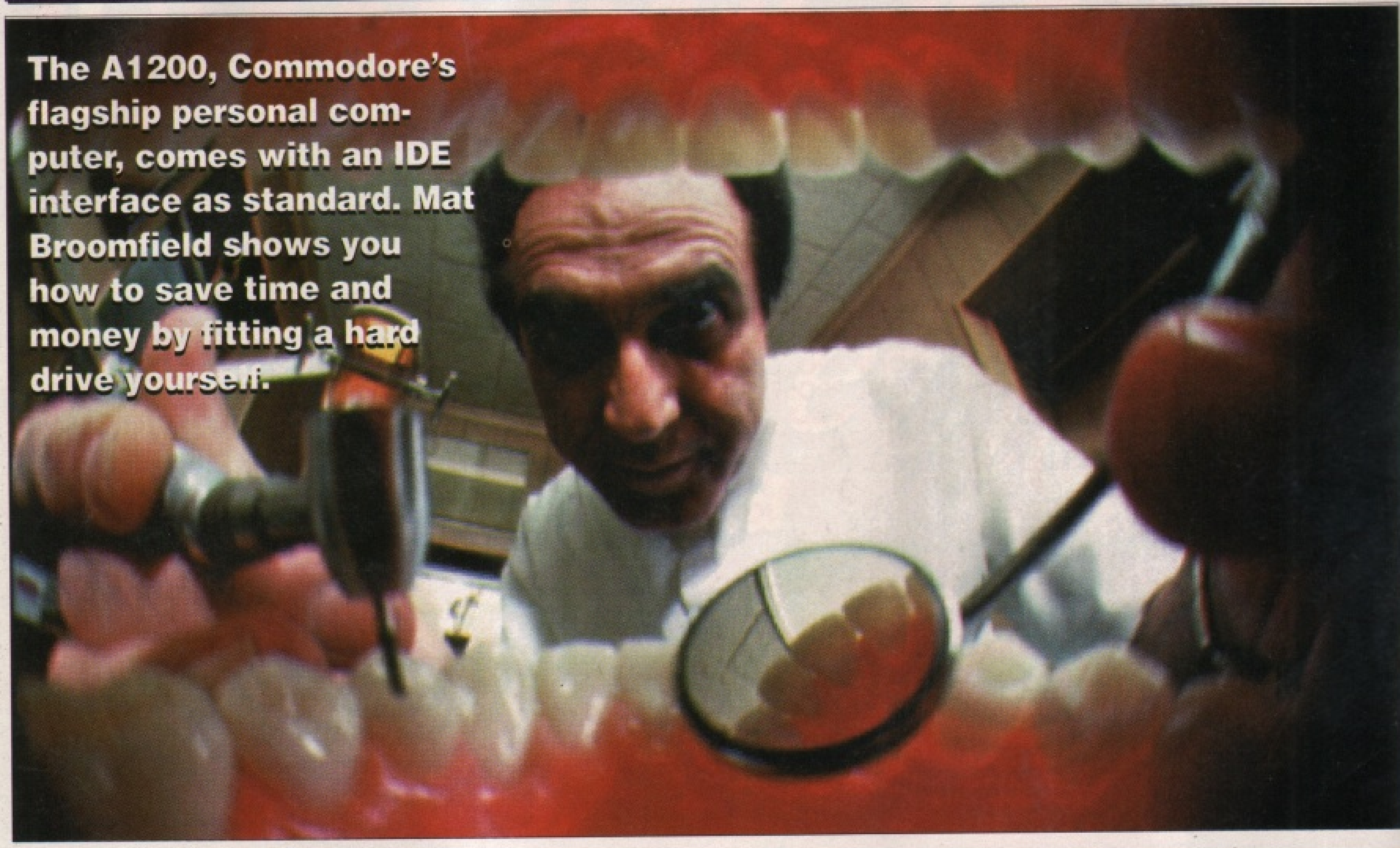


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Fitting an A1200 INTERNAL IDE HARD DRIVE

The A1200, Commodore's flagship personal computer, comes with an IDE interface as standard. Mat Broomfield shows you how to save time and money by fitting a hard drive yourself.



In the A1200 Commodore have produced a revolutionary computer which combined new processing power with 256,000 hi-resolution graphics, all in a neat package that retained a high level of compatibility with earlier Amigas.

The only real trouble with a state-of-the-art computer is that people want to write state-of-the-art software for it, and this requires increasingly large amounts of storage space.

For example, *Pro Page* comes on four disks, *Wordworth 2 AGA* comes on seven and *Infochannel* occupies an incredible 14 disks! It's clear that floppy disks are no longer the ideal storage medium – unless you have a passion for disk swapping that is!

Hard drives have become increasingly popular across all sections of the Amiga community thanks to companies such as GVP and Zydec, who have released drives that are cheap enough for most people to own. Commodore had already recognised the importance of hard drives by the time they released the A600 and this became the first mass-market machine to incorporate a hard drive interface as standard. It was only logical then, that they should also include such an interface in the A1200.

The A1200 comes supplied with a drive mounting bay capable of accepting a two and a half inch drive, and an interface that allows you to connect any industry standard IDE drive. This is particularly useful as IDE drives are commonly used in portable PCs. This means that you can really shop around to find the best deal when purchasing a drive. However, if you are new to the world of hard drives, you may prefer to buy a pre-installed drive from an Amiga-specific retailer. This will save you the time and stress of having to format and prepare a drive, to say nothing of copying an appropriate version of Workbench onto the drive.



Fitting an IDE drive is easy and will take you no more than 10 minutes. To do the job you'll need a medium sized cross head (Philips) screwdriver, an A1200 (!) and an IDE hard drive (double!). Depending on where you buy your drive, you may also need a connecting cable to link the drive to your computer. Our drive was supplied by Trilogic who fit all of their drives with a cable before shipping them.

A WORD TO THE WISE

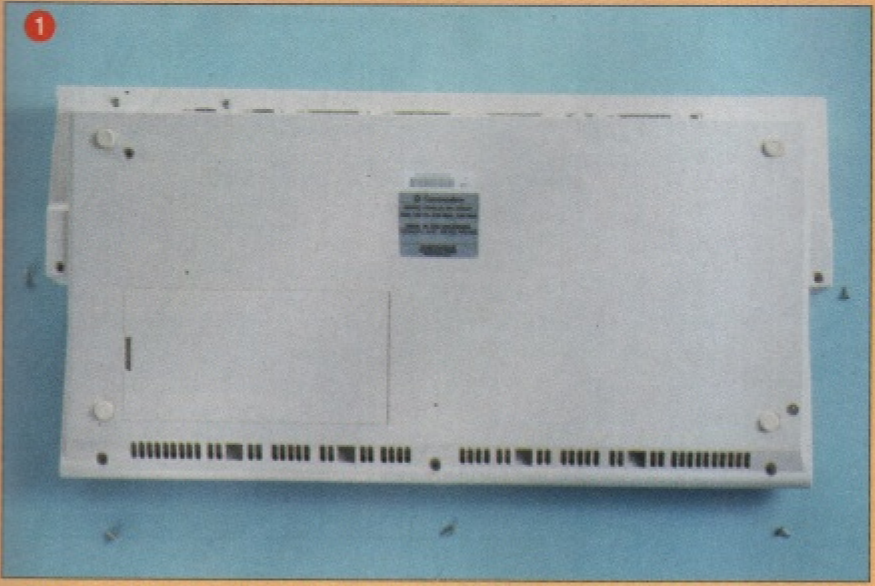
Before we go any further, I should just mention that opening your A1200 will invalidate your guarantee. Although the installation is extremely easy to perform, this means that you will not be able to claim free repairs from Commodore's authorised service engineers should a future problem arise regardless of the nature of this problem.

If you have any doubts at all, you may prefer to pay a Commodore authorised technician to install the drive for you. This will cost at least £15 extra, but you'll get peace of mind and your warranty will still be intact. Of course, I for one would prefer to fit my own drive and save the money, but it's entirely up to you...

OPENING YOUR COMPUTER

Before you even consider opening your A1200, disconnect all leads and peripherals, starting with the power cable. You can leave internal expansions such as RAM or accelerator cards in place – we won't be going anywhere near that part of the computer.

To perform the installation, you'll need a large flat area such as a table to open your computer on. I personally like to do this kind of thing on a carpeted floor because it stops the computer being scratched, and there's less distance for any pieces to fall. Obviously a shag pile carpet is no good because you risk losing screws in the pile!

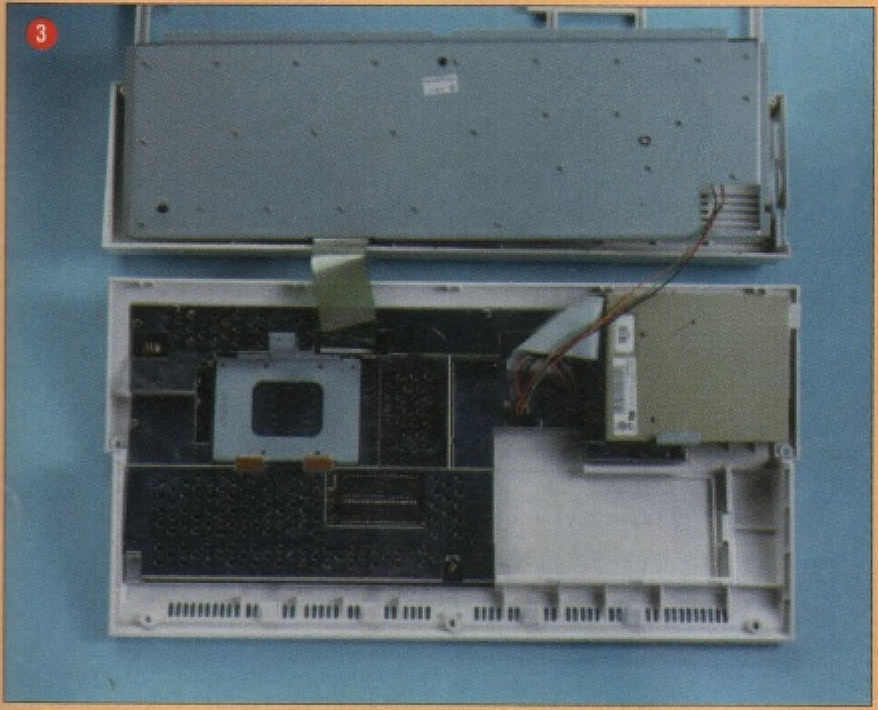


1 Having unplugged everything from your Amiga, place it upside down on your work surface. In case you haven't already noticed, the A1200 is housed in a two part plastic shell. The parts are held together by five screws which need to be removed. As you look at the underside of your computer, you'll see eight or nine screw heads. Don't go on an unscrewing frenzy at this point, some of the screws hold internal bits of the computer in place. Look at the picture and you'll see exactly where the appropriate screws can be found. The centre bottom screw should be covered by a silver sticker. This is the warranty seal and once it's been broken, you are no longer eligible for free repairs if the computer should happen to go wrong. If you're happy with that, break the seal and remove the screw. Once you've removed all five screws, put them somewhere safe till later.



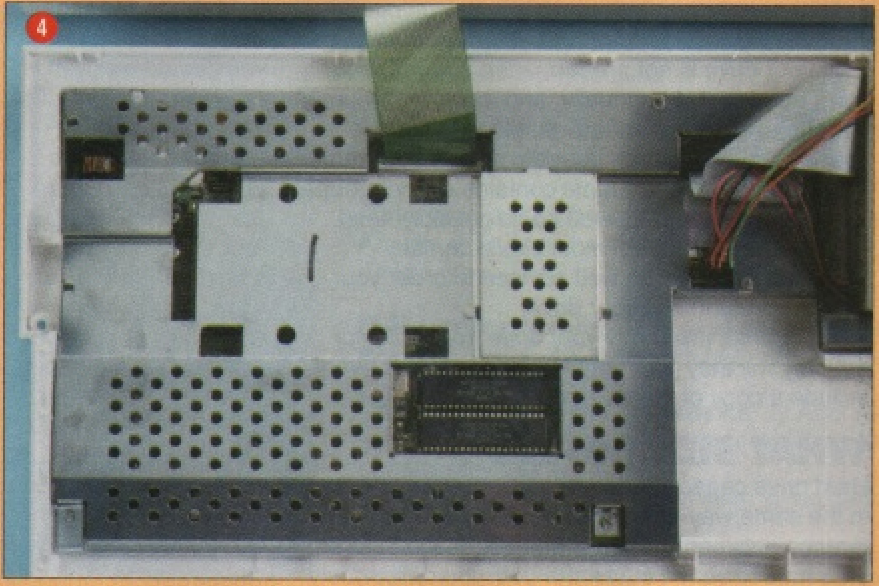
2 Holding both parts of the plastic A1200 shell, turn the computer over and place it back on your work surface. By gently lifting from its front corner, you should find that the top shell can now be lifted back quite easily. Be careful because you'll notice that the top shell is still connected to the computer by a small cluster of wires leading to a circuit board in the top shell. This circuit board contains three light emitting diodes (LEDs) whose purpose it is to indicate when the power supply is switched on, when the floppy drive is being accessed and, if you have one, when the hard drive is being accessed.

If you're careful, you should be able to lay the top shell down on your work surface behind the computer.



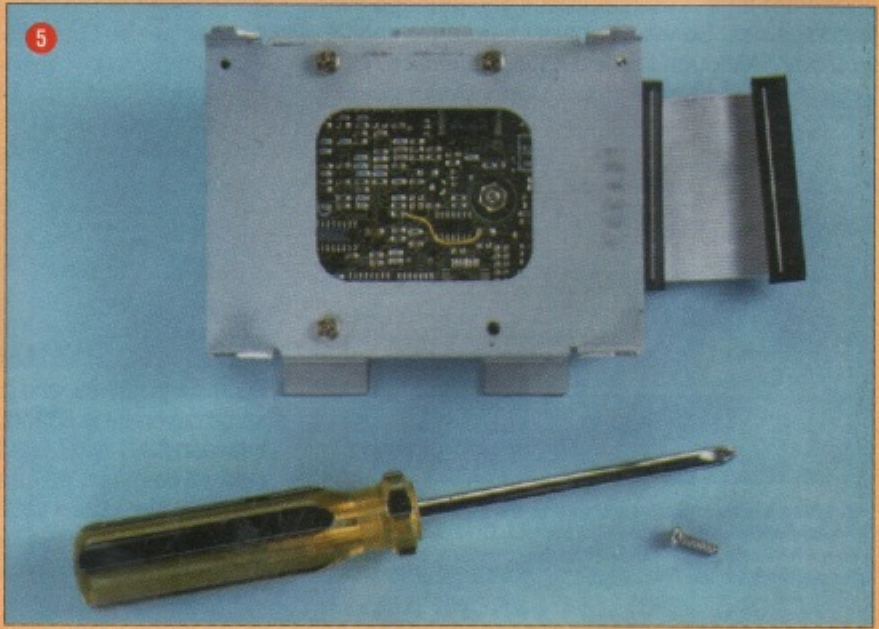
3 Now that the plastic upper shell of your A1200 has been removed, you can see some of the computer's inner workings. At the back right you'll see the internal floppy drive which is attached to the machine via a flat grey ribbon cable. At this stage, the rest of the computer is obscured by the keyboard which is itself attached by means of a green track cable. Lift the keyboard up (being careful not to put tension on the track cable) and lie it down on the top shell to get it out of the way.

Looking at the computer again, you'll see that virtually all of it is encased in some sort of metal sheeting. This is called shielding and its purpose is to stop electrical emmissions from the computer from interfering with other equipment that may be nearby. Although this isn't actually much of a problem (unless you use a lot of sensitive equipment) American laws governing RF (Radio Frequency) emissions makes it essential.



4 You should see a heavy metal cradle towards the upper left side of the machine. This is the hard drive cradle, and you should now be able to appreciate why you're only supposed to use two and a half inch drives.

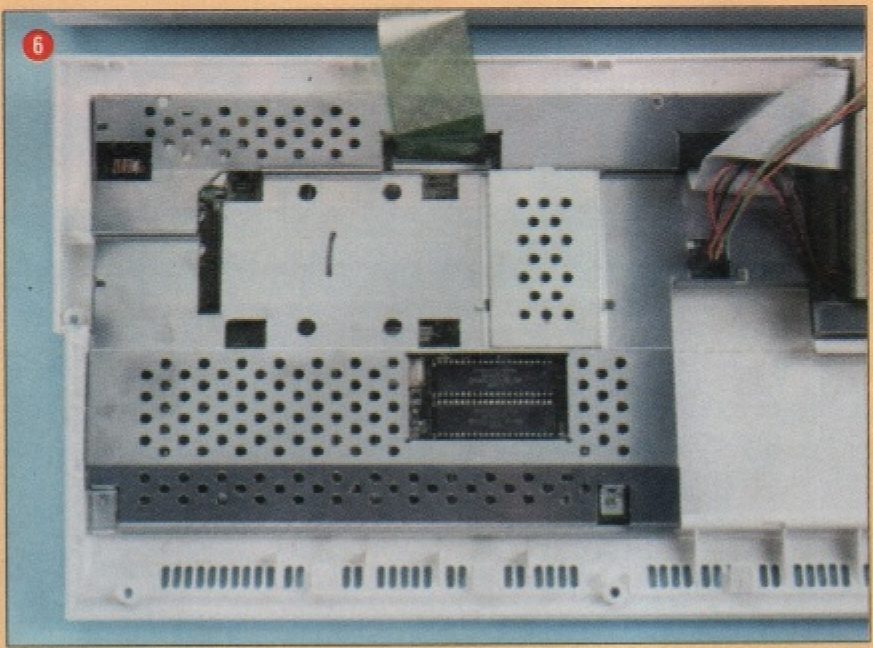
Remove the cradle from the computer – it simply rests on the main circuit board on four small legs.



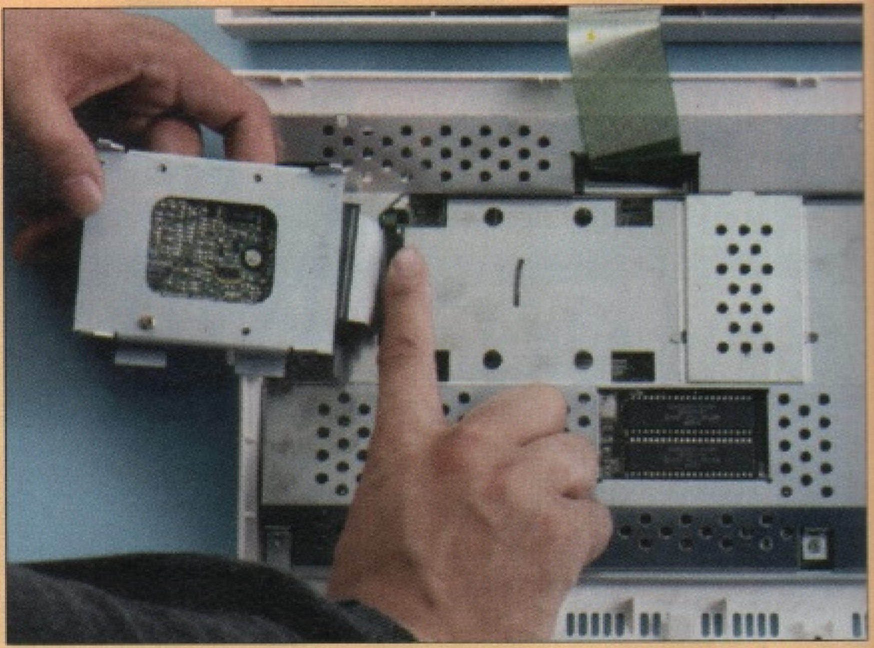
5 Now is the time to attach your IDE drive to the cradle. Turn the cradle upside down so that its four legs are facing you and the three keyboard rests are face downwards. Turn the cradle so that the two keyboard rests are nearest you, and the single rest is at the top. Now unwrap your IDE drive. Although these drives are nowhere near as delicate as hard drives used to be, you should treat it with respect. That means, no banging or dropping it and try not to touch the exposed circuitry. Needless to say, using it as a replacement ball in a game of rugby is definitely out!

Holding the drive circuit side uppermost with the cable to the right, put the cradle on top of the drive. There are five holes in the cradle. Line up the four which are in a rectangle with their counterparts in the drive casing. Once the two are lined up, insert and tighten all four screws. The screws should have been supplied with your drive.

»



6 You should now locate the drive connector on your computer circuit board. It's slightly to the left of the space that the cradle came out of, can be recognised as lots of pins sticking up in a rectangular group. Holding the drive and cradle in the same position as you joined them in, put the drive plug onto the connector. Be careful to ensure that the connector and plug line



up properly. The plug should slide into position easily.

Once you've inserted the drive plug flip the drive and cable over so that the drive is uppermost and the cable is not twisted, and return the cradle to its original position on the circuit board.

PREPARING THE DRIVE

If you purchase your hard drive from an Amiga dealer, there's a fair possibility that it will come pre-formatted and with software already installed on it. This software should include a version of Workbench 3 and may also include further IDE specific software for backing up and formatting the drive. If this is the case, then you are one of the lucky ones because you can begin using your drive immediately.

If your drive is not pre-formatted and prepped, you'll need to do it manually, and there are a number of pieces of software available to let you do this, but only one which is public domain. Written by Microbotics, *Hard Frame* contains every formatting and prepping utility you could possibly need. You can acquire it from most public domain libraries, and you'd be well advised to order your copy before you buy your drive!

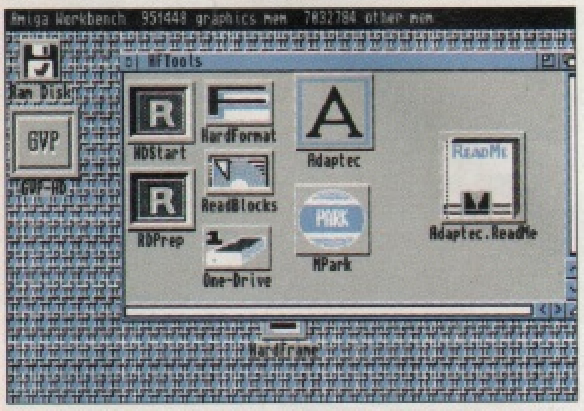
Of course, if you buy your drive from Trilogic, not only will they pre-format it for you, they'll even include a copy of *Hard Frame* for nothing!

WHAT SIZE DRIVE?

Hard drive capacities are measured in megabytes in the same way as memory is. The important difference between the two is that information stored on a hard drive will stay there until you deliberately erase it. Information stored in memory will be lost as soon as you turn the power supply off.

Just about all hard drive users store a complete version of Workbench on their drives, and most will also store their favourite utilities and perhaps even some games. So what capacity hard drive should you buy? Although this is a difficult question, I would say that there's virtually never a time when it's worth buying a 20Mb device; even if you can't imagine filling that much space now, you'll soon find a way once you get used to the idea of being a hard drive owner.

The first thing that you should do is list all of the hard drive installable games and utilities that you use or play regularly. Figure that you'll need about a megabyte of storage space per disk of software. This is not absolutely precise as disks don't hold a meg of data, but it's a good enough rule of thumb. Once you've arrived at a figure, you should double or treble it according to your financial resources. This allows for programs that you didn't know installed on hard drive, programs that you haven't bought yet and data from the programs you already use.



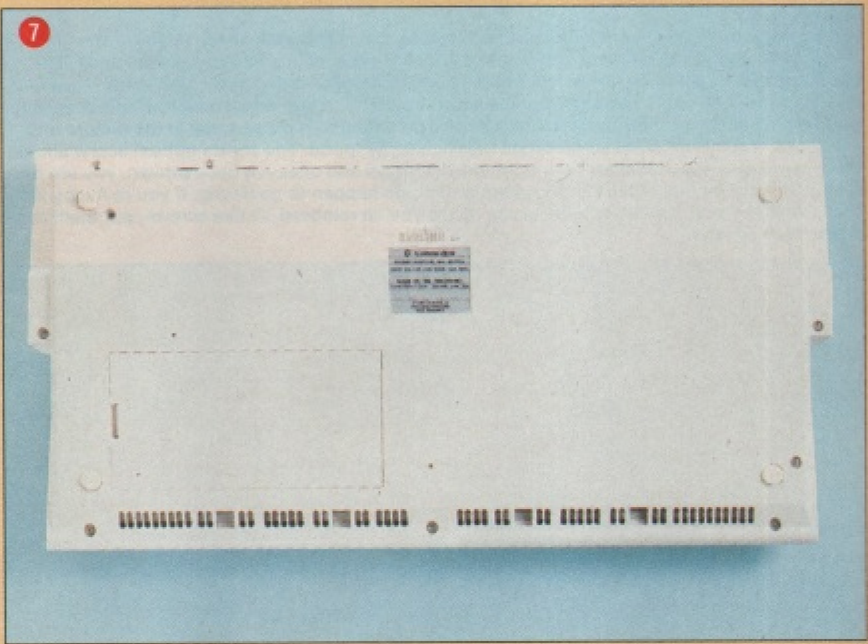
Hard Frame is the only drive prepping and installation software available under licence from Microbotics. Great care should be taken when using it because it has the capability of erasing all information from the disk.

INSURANCE

As soon as you open your computer's case, you void the warranty thus forfeiting any repair/replacement rights that you may have had.

Trilogic (in conjunction with Cornhill Insurance) are able to offer you an insurance policy on any computer provided it's six months old or less. The all risk policy will cover you if you accidentally spill a cup of tea over the computer or damage it whilst installing a hard drive. It does not cover fire, theft, flood or lightning damage however – that's the job of a standard household policy.

A two-year policy covering computers worth up to £600 costs £27.99, and a three-year policy with the same coverage is £32.99. If your computer is worth between £601 and £999.99, two and three year policies will cost you £42.99 and £67.99 respectively. They will also collect your computer, install the hard drive and return it to you for £20 on top of the price of the drive. Phone Trilogic on 0274 691115.



7 Make sure that it's properly seated, then replace the keyboard and the computer's plastic top shell. Holding both parts of the shell firmly, turn the computer upside down and replace the screws. When doing this, please note that they are of the self-tapping variety, therefore you should be very careful not to overtighten them.

Once the screws have been replaced, turn the computer back over, plug all of the leads and peripherals back in and that's it, your drive is installed!

IF YOU DON'T OWN AN A1200

If you're considering purchasing an A1200, and this article has made you think about buying a drive as well, it's worth noting that Trilogic offer a range of machines with drives prefitted that work out considerably cheaper that the two would cost separately.

For example, an A1200 with a 40 meg drive already fitted will cost you £499.99. To buy the two individually would cost £518.98. Even better yet, Trilogic also provide a two-year insurance free of charge, and are the only suppliers in Britain to offer this duration of coverage as standard. Even Commodore themselves only offer one year. CU

DISCLAIMER

Although this installation is easy enough for even the Tory cabinet to perform, any mistakes can be potentially deadly to your computer or hard drive. Neither CU Amiga nor Trilogic can accept any responsibility whatsoever for any damages that may occur in the process of performing this installation. If you are in any doubt as to your ability to perform the installation, you may be better advised to pay a professional to do the job for you. Trilogic will do it for £15 plus postage and packing. Tel: 0274 691115.

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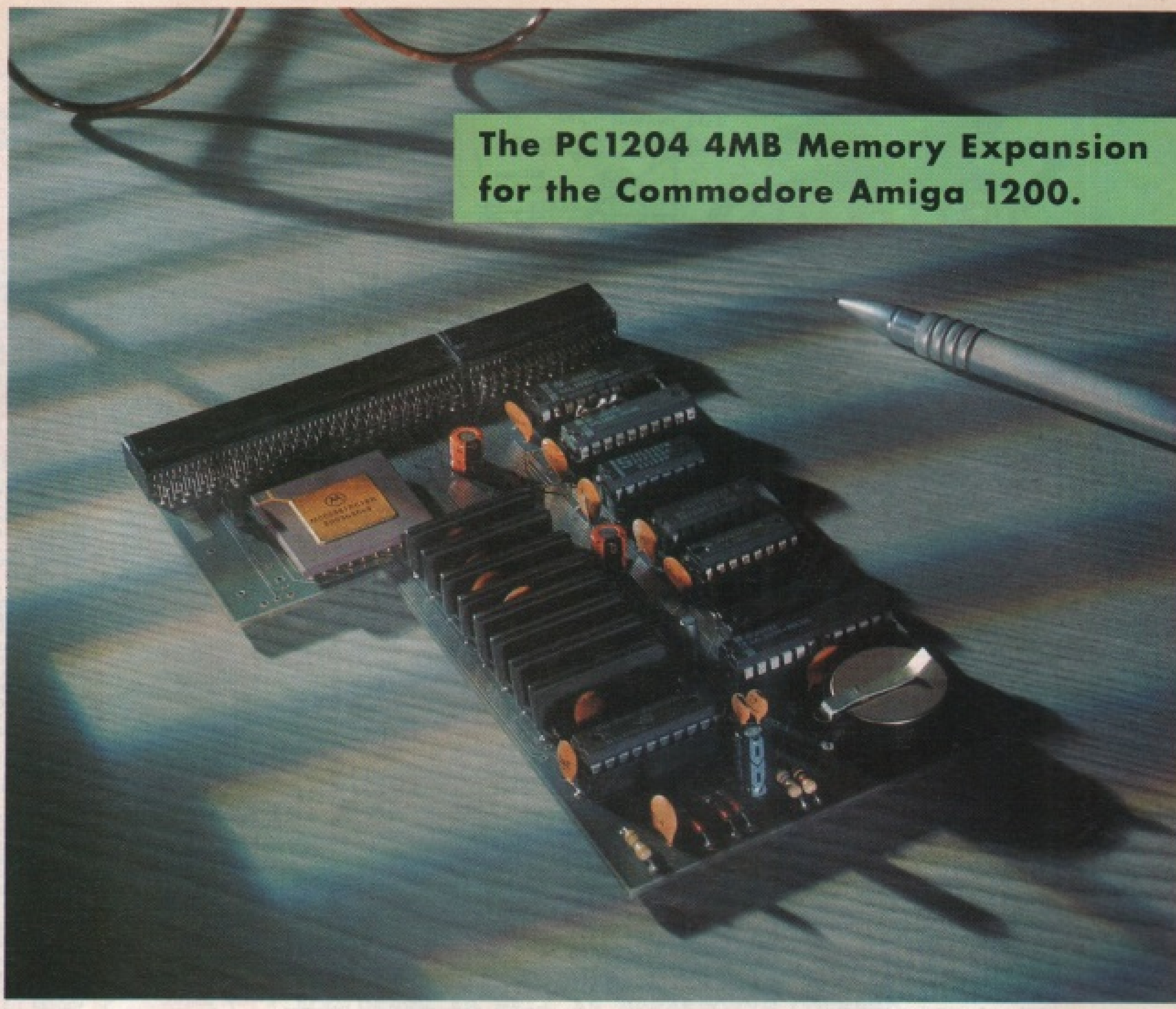
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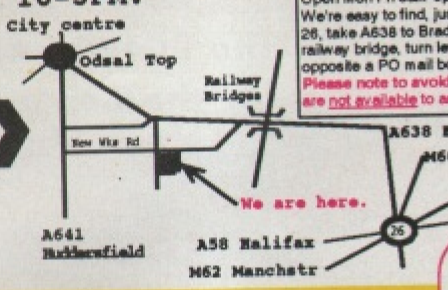
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BUYERS GUIDE

In the second part of our comprehensive round-up, we look at another batch of blistering sticks.

PART 2

Forget printers and hard drives, joysticks are the number one home computer peripheral. There's such a wide variety available, all offering 'robust steel shafts' and 'mega-blaster fire', that it's almost impossible to know which one to go for. But it's a sad fact that, despite the diversity of the market, there are only actually a few sticks worth buying. So, once more, CU AMIGA's top panel of expert testers has scoured the scene to bring you the definitive guide to the top sticks on offer. Remember – don't buy till you've read the review.

Joysticks



THE BUG • CHEETAH • PRICE: £14.99 • TEL: 061 707 7080

The Bug from Cheetah is one of those novelty sticks which looks as though it could actually be rather good, but when you use it you find out that your assumptions were completely wrong.

It's impossible to get a good grip on the ultra-short handle and when the going gets tough the hand starts slipping. The only good thing about this stick is the well-placed fire buttons, which are perfect for thumb use, but a little awkward when it comes to finger operation. One small compensation is the size, which is spot on, fitting perfectly into the palm of your hand. Handhelds like this are best for fast moving games, like *Sensi Soccer*, but in that regard the Speedking from Konix beats the Bug hands down.

This new 'slime green' version does absolutely nothing for an already ugly stick. What I would like to see is a rubberised version of this, not out of any kind of fetish I hasten to add, but because you'd get a much better grip. An extra £1.50 on the asking price for that, a redesigned handle and this would be a far better stick.

VERDICT
Uncomfortable to hold and difficult to use.

64%



125+ • CHEETAH • PRICE: £9.99 • TEL: 061 707 7080

This is a real veteran joystick – I remember using one back in the days when the Spectrum was popular and nobody had even heard of the Amiga.

The generation gap shows when you get to grips with this stick as it forgoes microswitches for more traditional leaf switches. This isn't a bad thing though – whilst they're not quite as responsive as microswitches, there's none of that annoying clicking and they actually work better with flight sims.

Although it's hardly revolutionary, the stick is comfortable to hold. What does let it down are the fire buttons, which could have been more responsive.

Despite being ancient in joystick terms, this is still a good performer. If you have a tenner spare and want a stick which will give you the kind of performance that you can't find with microswitches, this is worth more than a casual look.

VERDICT
Solid and reliable. This is one of the best leaf-switched joysticks on the market.

80%



COMPETITION PRO EXTRA • DYNAMICS • PRICE: £16.99 • TEL: 0457 876705

Of all the sticks to be reviewed in CU AMIGA over the years, none has had such consistently good reviews as this one.

The stick's travel is tough to begin with, but after a few days it loosens up and becomes far more tolerable. This version also as a slow motion mode which slows the action down to one third of its normal speed. This is particularly handy for games such as *Project X* where the pace is blindingly fast.

Because it uses rubber pads instead of suckers to keep it on a table top, it's comfortable to hold. If there has to be a criticism it's that the autofire switch is a little out of the way. Apart from that the Comp Pro is one of the best sticks ever. Reliable, accurate and solid, there's almost no reason for you to look at any other stick.

It may look dated, but that's because it's been so successful for so long. You'll be hard pressed to find a better stick.

VERDICT
Still the best all-round joystick on the market.

90%



JETFIGHTER • SPECTRAVIDEO • PRICE: £14.99 • TEL: 081 900 0024

This certainly looks impressive to begin with. It's larger than your average stick with a good array of switches. Using it, however, is a completely different kettle of fish.

For starters the stick's size gives it too much travel, which limits its responsiveness. The fire buttons are also cluttered up with the various autofire switches, so if you get too carried away it's easy to thumb the rapid fire off.

Should you lose your temper with the stick, the base is constructed well enough to withstand a good thumping, providing you can get the stick off the table.

Although we had no problems with ours, the looseness of the stick and cheap feel of the plastic gives you the impression that the Jetfighter wouldn't be able to survive a determined pounding.

VERDICT

Bulky, uncomfortable and unresponsive.

43%



BOLLISTICK • CHEETAH • PRICE: £9.99 • TEL: 061 707 7080

Joypads may be the norm on consoles, but for some inexplicable reason they're few and far between on the Amiga.

Even by console standards the Bollistick is a bit of a weirdo. You grab hold of the two handles and operate the pad with the thumb of your left hand and the buttons with the thumb of your right. The choice between joypad and joystick is mainly one of personal preference, but I actually prefer this pad to most conventional joysticks. The response is fantastic and it's actually very comfortable to use.

In fact the only drawback of this stick is that it's very awkward to hold if your hands are bigger than average size. Apart from that there's almost nothing to fault this stick on. The casing could have been made out of better quality plastic, but a joypad hardly takes the same level of thrashing that a normal stick does, so that hardly matters.

VERDICT

Small, neat and very responsive.

88%



FREE WHEEL • LOGIC 3 • PRICE: £39.99 • TEL: 081 900 0024

So-called 'novelty' joysticks are normally very limited in their usefulness, or just plain crap. The Free Wheel touches both categories.

For sheer innovation this scores 10 out of 10. There's no base, just the wheel and the cable. It works with tilt switches which detect when the wheel is moved, while the fire buttons are set in the rim at the top.

Because there's no base, there's nothing to rest your arms on. If you start feeling wrist cramps it's nearly impossible to take one hand off the wheel to pause the game without sending your car careering off the track. The response is incredible, in fact it's so good that it actually takes you a couple of hours to learn how not to over compensate.

Ignore the novelty value, this just doesn't cut it when compared to conventional sticks.

VERDICT

A very good idea, but one that just isn't practical in execution.

62%



MEGASTAR • SPECTRAVIDEO • PRICE: £24.99 • TEL: 081 900 0024

This is the big brother of the Superstar we reviewed last month, although for some reason it doesn't quite match up to it.

Again, it's impressively large, with plenty of suckers to keep it held fast on your table top. There are more fire buttons than you actually need, although all of them are equally responsive, if somewhat hard to reach. It's nice to see such a wide choice of fire button positions.

What lets the Superstar down is the ultra-tense stick. Where the Superstar is loose and has plenty of travel, you end up fighting this one, which ruins any chance you have of notching up a high score.

The response is excellent once the stick has loosened and the twin fire buttons are perfectly placed.

VERDICT

Solid, but the tense stick makes it unresponsive.

72%

NAVIGATOR • KONIX • PRICE: £15.99 • TEL: 0495 350101



The only rival to the Speedking's mantle of best hand-held joystick comes, coincidentally, from the same company.

The Navigator is decidedly more futuristic, with a black and blue rounded design. Not only does this look good, the shape is also very comfortable to hold. It also features an autofire mode, with the switch sensibly located in front of the stick.

Like most hand-held joysticks this suffers from having a really short stick. Once you're used to it the problems soon dry up, but some people never adjust to only having two inches of plastic at their mercy.

Obviously hand-held sticks aren't nearly as versatile compared to likes of the Competition Pro, but in the case of the Navigator it's far more comfortable to hold.

VERDICT

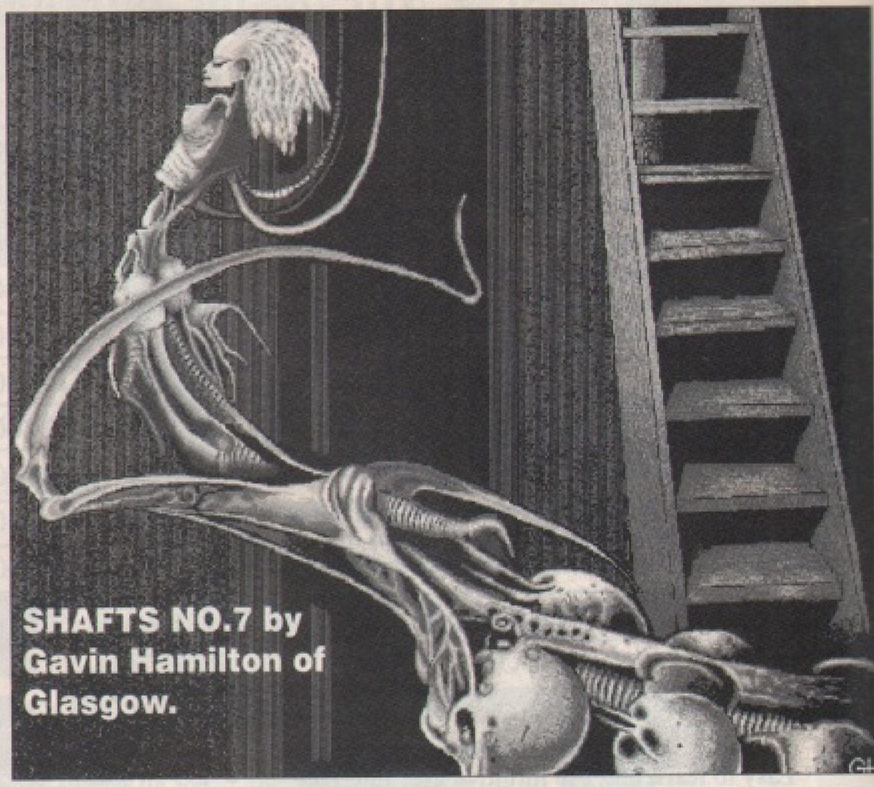
A good alternative to the Speedking. Better looking, although not as responsive.

81%


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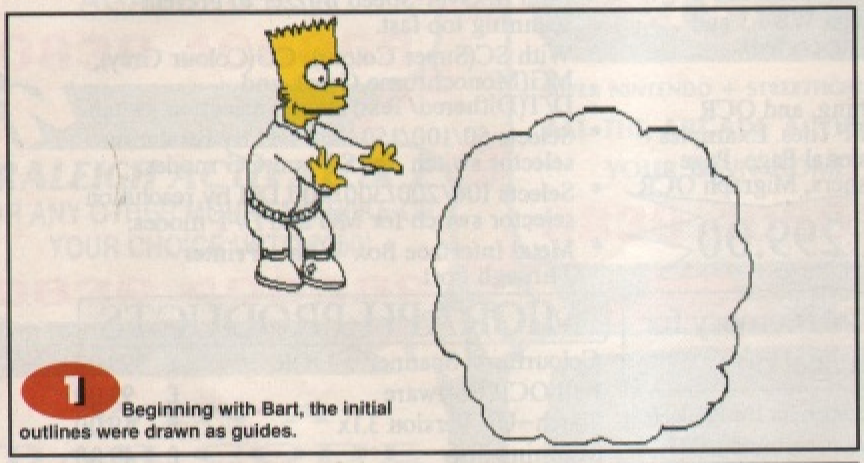
ART GALLERY

If you'd like to see your name and work in print sort out some *DPaint* files and send 'em in. Here's Tony Horgan's selection of exquisite art from readers who did just that.



SHAFTS NO.7 by Gavin Hamilton of Glasgow.

BART AND HOMER The male contingent of the Simpson family get the pixel treatment from Raymond Vass of Moray in Scotland.



1 Beginning with Bart, the initial outlines were drawn as guides.



2 Next up is Homer, in outline form once again.

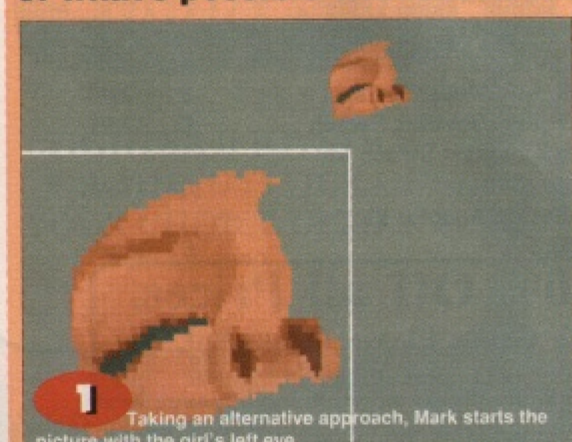


3 Homer's hat was drawn on a spare page, then pasted onto the main picture.



4 A bit more detail on the characters and the background, and the scene's complete.

HIPPY CHICK Mark Gray of Blackpool gives us a stunning example of what's possible with the new AGA 256 colour modes.



1 Taking an alternative approach, Mark starts the picture with the girl's left eye.



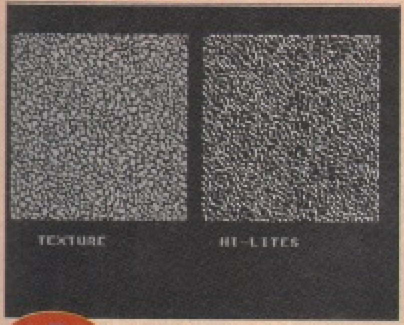
2 Working out from the centre, the rest of the face is drawn with full shading.



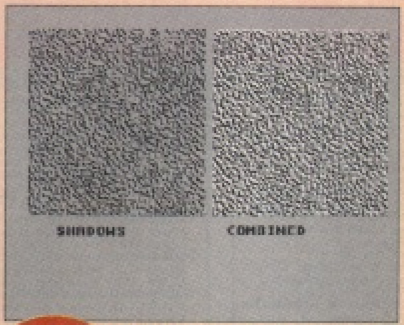
3 The lips and the eyes were adjusted for position and scale at this point, with a bit of smoothing to cover the joins.

BATTERIES NOT INCLUDED

Another AGA masterpiece, this time from Mark Lockett of Manchester, who you may remember featured in the May '93 Art Gallery.



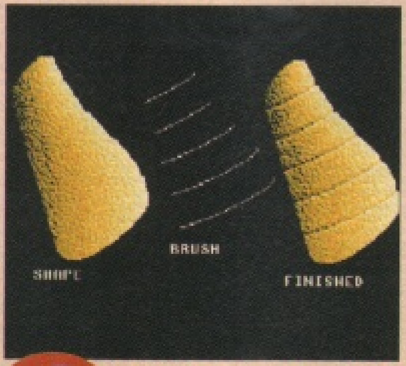
1 Most of the work went into making the leather effect on the gun butt.



2 An approximation of the texture was made by overlaying highlights on a wrinkled background.



3 The texture was cut to the right shape, and filled with *DPaint's* WRAP/FILL tool.



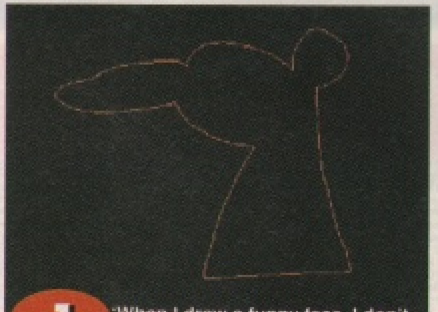
4 The shade mode was used to add the texture effect whilst keeping the shading of the graduated fill.



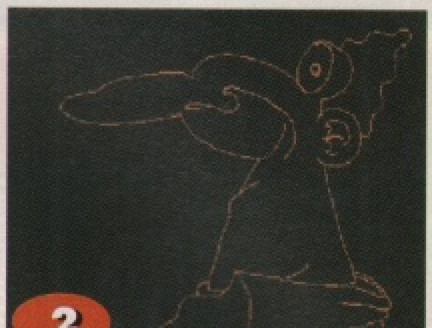
5 A few minor details were added (like the rest of the picture), and here it is in all its glory. Very nice too.

FUNNY GEEK

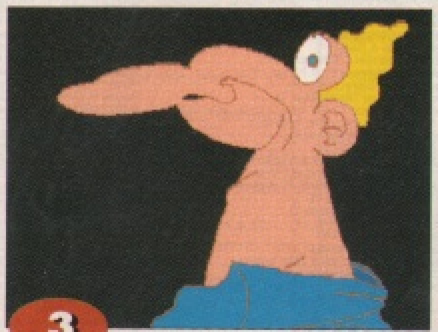
Funny Geek comes from Trond E. Haveland of Fyllingsdalen in Norway.



1 'When I draw a funny face, I don't sit down and make a lot of pencil drawings, I just jump into it.' writes Trond.



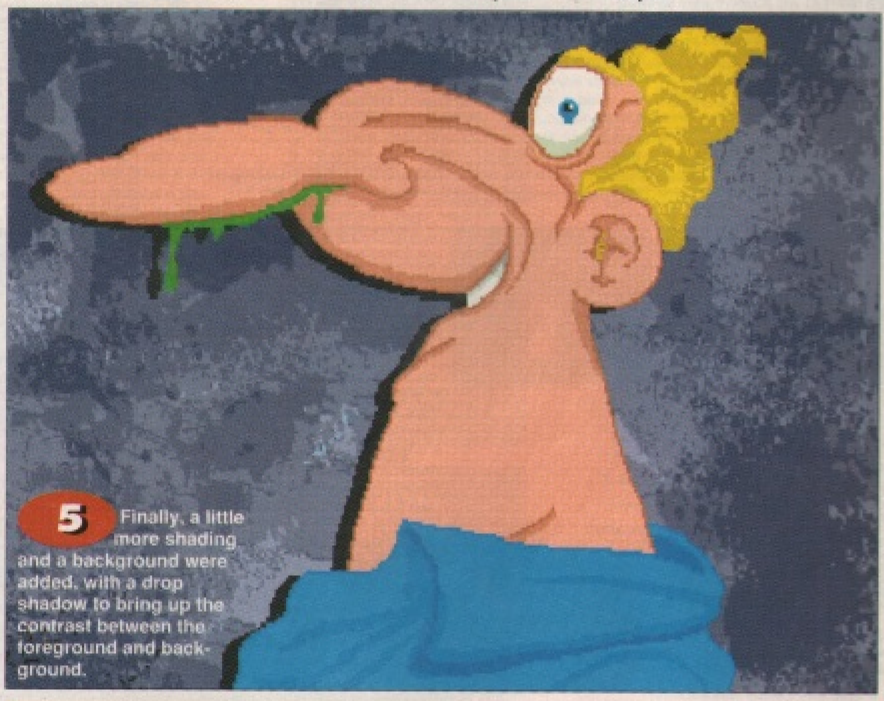
2 Features are outlined on the face, and a shirt collar is added.



3 The main areas were filled in with solid colours, bringing the cartoon to life.



4 A bit of shading was added to give the picture some depth.



5 Finally, a little more shading and a background were added, with a drop shadow to bring up the contrast between the foreground and background.

GET DRAWING

When sending your work to us, here's a few points to remember:

1. Include a selection of files showing the picture in various stages of construction.
2. If your work is based on that of another artist, please include his/her name and where you saw it.
3. If you would like your disk returned, please include an SAE.
4. Please mark your envelope 'Magnetic media – do not X-Ray' and send it to: Art Gallery, CU AMIGA, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.



4 With most of the detail complete, the rest of the outline was sketched.



5 Trial and error concluded that red was the most suitable background.



6 With the background on a spare screen, the girl was picked up as a brush and pasted down in one easy move.

PD SCENE

Nerves of steel, heart of gold, knob of butter...yes, it's Tony 'and his' Horgan with another monthly guide to all things public domain.

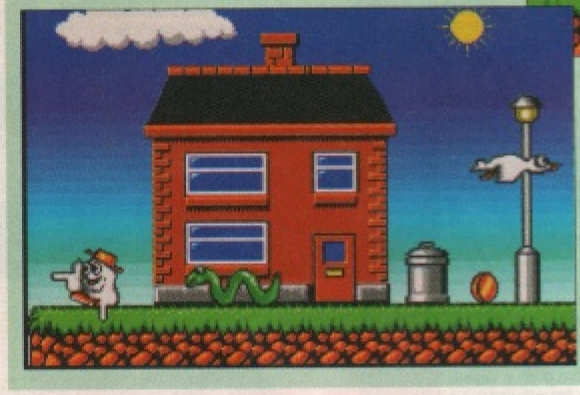
WIBBLE WORLD GIDDY

game

This is the best PD game since *Transplant*. If you think it looks and sounds rather familiar, you'd be right, as it bears more than a passing resemblance to the *Dizzy* games.

Giddy is the star of the game, an egg-like character with unfeasibly large hands. Wibble World is a colourful flip-screen comic book land, where slippery snakes mingle with spiders, Ninja Turtles and seagulls. There's plenty to get the grey matter working too, with lots of little puzzles to solve along the way. The problems don't amount to any more than using the right objects in the right places, but what do you expect for a couple of quid?





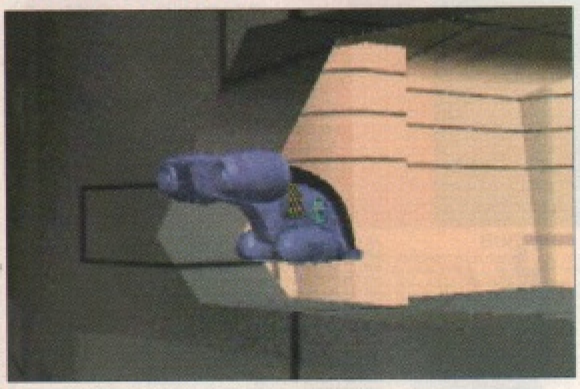
Not only is it one of the best looking PD games ever, it's one of the most playable too. Slick from start to finish, *Wibble World Giddy* is one game not to be missed.

Available from: Cynostic PD, 85 Wyken Croft Road, Coventry, CV3 2AD. Tel: 0203 613817. Disk no. G0112. Price: £2.00 (including P&P).

91%

HEADING FOR HOME

animation



It's amazing how little you can fit onto four disks if you try hard enough. Would you believe this 3Mb animation is only about 10 seconds long? Then again, that's HAM ray tracing for you.

Space is the theme once again. The sequence is about as simple as they come – a stumpy little spaceship orbits a planet, then enters the docking bay of a spacestation. It's very nicely done, with lots of different pans and camera angles, but nothing actually happens. Unless you're into ray tracing yourself, there's not much to get excited about, even though technically it's quite neat.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk nos. 3069-3073. Price: £11.00 (including P&P).

62%

HOW TO SKIN A CAT

demo

Melon Design always come up with something a bit different. This one's completely free of the usual scroll-text and techno-babble of most demos, and looks a lot better for it. Starting with a tunnel made of tiny dots, it moves through some interesting effects such as jelly vectors, blurred 3D dot patterns, and a few more variations of the basic vector themes.

It's supposed to have AGA graphics support, but it doesn't seem to be much different whether you run it on a 500 or a 1200. There's a good simple soundtrack that suits the arty laid-back style of the graphics. You won't be bowled over by reams of stunning effects, but it's worth a go if you've had enough of the usual demo fare.

Available from: Cynostic PD, 85 Wyken Croft Road, CV2 3AD. Tel: 0203 613817. Disk no. D0138. Price: £2.00 (including P&P).

80%



NO LIMITS

music disk

2 Unlimited fans are spoilt for choice this month. The inescapable *No Limits* gets the remix treatment first, with this disk from Legend. There are two main alterations here. The tempo has been pushed right up, and there's a more hardcore sound to the backing beat. Some of the samples haven't been pitched up accordingly, and get cut off early. It's not radically different from the original, but should please fans of the duo.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk no. 3088. Price: £3.00 (including P&P).

70%



SCOOPEX PLAYS 2 UNLIMITED

music disks

It's three for the price of two disks with this one. *Get Ready For This*, *Twilight Zone* and *The Workaholic* are on the menu. All three tunes are created from the rap versions, with big chunks of vocals included. The mixes have been chopped up and messed around a bit with a tracker, but there aren't any new sounds, beats or riffs. Considering the length of the samples, the sound quality's not bad at all, but they're all a bit too unadventurous to cause much of a commotion.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk nos. 3139+3140. Price: £5.50 (including P&P).

65%



STAR TREK DEEP SPACE 9



slideshow

The title screen proudly boasts 'The first available slideshow of *Deep Space 9*'. That may be, but in their rush to get it released, the producers have ended up with one of the ropiest slideshows I've seen for ages. All the screens are in 4096-colour HAM mode, but are either blurred, grainy or too dark. Its saving grace is the subject matter.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk no. 3108. Price: £3.00 (including P&P).

50%

CRASH BANG WALLOP

game

Could this be one for *Super Sprint* fans? It should be, but falls some way short of the mark, despite a good start. Where you'd normally get the sounds of a roaring Ferrari to match the intro screen, you're greeted with a sampled Robin Reliant that refuses to start. The trouble is, it's quite appropriate.

Viewed from above, it's a simultaneous two-player car racer spread over 10 tracks. If you look hard enough, you should find some semblance of inertia, speed, and laws of physics in general, but to say the cars moved realistically would be rather generous. I've got a bit of a soft spot for this type of game, but even so, *Crash Bang Wallop* didn't exactly have me gagging for another go. Then again, as PD games go, it could be a lot worse.

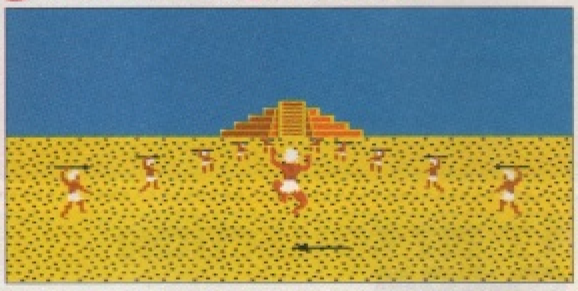
Available from: Cynostic PD, 85 Wyken Croft Road, Coventry, CV3 2AD. Tel: 0203 613817. Disk no. G0110. Price: £2.00 (including P&P).

59%



ASSASSINS GAMES

game compilation



Butter up the Hovis, it's nostalgia time! *Aztec Challenge* is now available for your Amiga! Retro-coders Bignonia have converted the crumbly old C64 game to 16-bits. It comes in two flavours, the original blocky variety, and a slightly smoother-looking Amiga update. The game is a seven-level romp set in ancient Inca country. As the brave young warrior, you take on a variety of life-threatening challenges in your attempt to find the mystical hidden gold (or something like that). It's brilliantly crap – identical to the original in every respect.

You also get another two games on the disk. *Landmines* is a tediously simple game of chance, and *Jonus Fulstrand* is a promising little platform game, let down by lack of speed. Be warned: you need a sense of humour to appreciate this disk.

Available from: Assassins, 32 Ripley Avenue, North Shields, Tyne and Wear, NE29 7SA. Tel: 091 2586418. Price: £1.00 (including P&P).

80%

BAIT MASKING

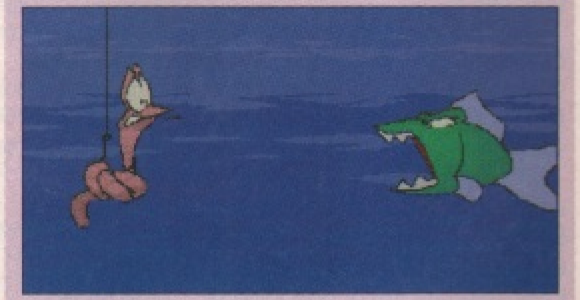
animation

Fish-fanciers, this is the demo for you! It's another from Eric Schwartz, and fits into any machine with 2Mb of RAM.

The opening shot is of a worm on a hook, slowly sinking beneath the surface of a river. Along comes a fish, who takes a fancy to the worm. To save his skin, the worm quickly puts on a scary mask, which sees off the hungry fish. Later, the fish comes back with his own mask, and the two end up spooking each other. All the Schwartz trade marks are in there, but it's far from his best. Even so, it's another one for the collectors.

Available from: Cynostic PD, 85 Wyken Croft Road, Coventry, CV3 2AD. Tel: 0204 613817. Disk no. A0074. Price: £2.00 (including P&P).

77%







SIMPLY THE BEST NO. 41

demo compilation



More demo-foolery as compiled by LSD comes your way in *Simply the Best 41*.

Sometimes I Wish I Was Famous is an intro from Circle, featuring some weird samples and interesting variations on the current fave effects. There's a BBS intro from Dark Demon, sporting some clever rotating cog-wheel effects, but best of all (yes, it gets better!) is the trackmo from Defiance, called *Shangri La*, which makes up for the inadequacies of the other demos on the disk. Derivative in places, it's still impressive enough to warrant the attention of all armchair ravers.

Available from: Cynostic PD, 85 Wyken Croft Road, Coventry, CV3 2AD. Tel: 0203 613817. Disk no. D0136. Price: £2.00 (including P&P).

79%

PD UTILITIES

What's extremely handy and available to anyone for next to nothing? No, it's not Tony Horgan, but the latest and greatest PD utilities.

ADVANCED UTILITIES II
utility compilation

Here's another of those handy disks with a sprinkling of various utilities. Those included are *Restaure, Re-Org, SCSI Mounter, Compress Disk, Enforcer, Keymap Ed* and *KME*, some of which need Kickstart 2.04 or higher to run.

Restaure V1.0 is an easy-to-use disk salvager. It's not an alternative to *Diskdoctor* – instead it helps you get back files that have been deleted. When you delete a file from a disk, the actual data isn't blanked out, it's merely scrubbed from the directory list. This means that providing you haven't written back to the disk after deleting a file, *Restaure* can usually get it back for you. This could save your bacon one day.

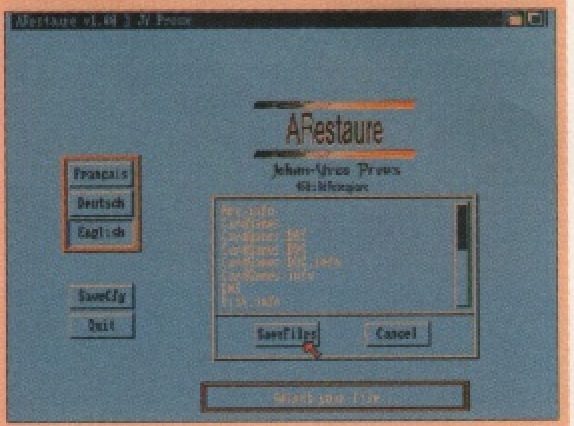
Re-Org V2.33 is a disk optimiser. If you do a lot of reading and writing to the same disks, they gradually become fractured. This makes loading and saving a lot slower, but an optimiser can put it all back into order. *Re-Org* does a good job of it, but remember to backup any data before you optimise it.

SCSI Mounter is a removable partition mounter for SCSI devices, *Compress Disk V1.0* is a disk archiver, and the remaining utilities are two remarkably similar keymap editors, both of which are simple to use and very handy.

There are some good utilities here, but it's a shame that PD Soft didn't organise the disk a bit better. All the programs have just been thrown onto a non-booting disk, with all the directory icons piled on top of one another. Come on PD Soft, if you're charging £3 per disk, you could at least put in a bit of effort on the presentation.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk no. V1067. Price: £3.00 (including P&P). Memory: 1Mb. Compatibility: Kickstart 2+.

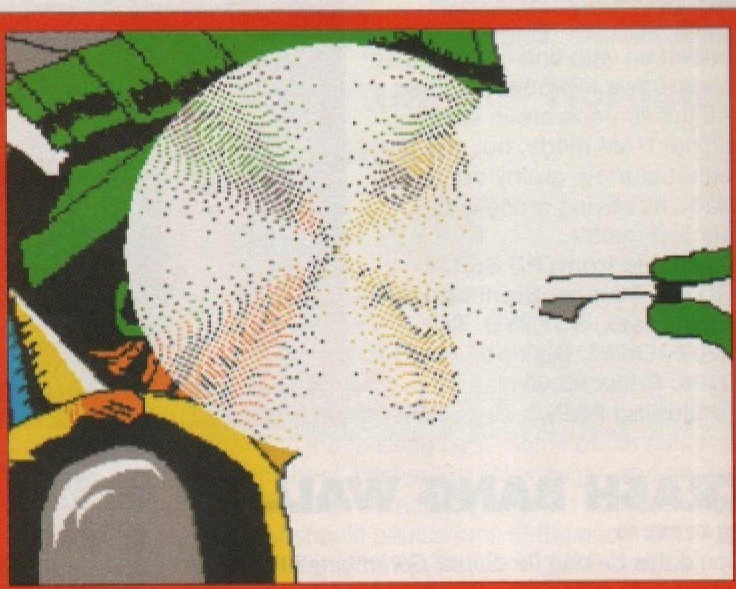
80%



AMOSSIBLE
amos extensions

There's nothing more frustrating than a program that refuses to work. As programming languages go, AMOS is pretty user friendly, but some of the shortfalls in the manual can leave you pulling your hair out. AMOSSIBLE aims to unravel some of those undocumented mysteries.

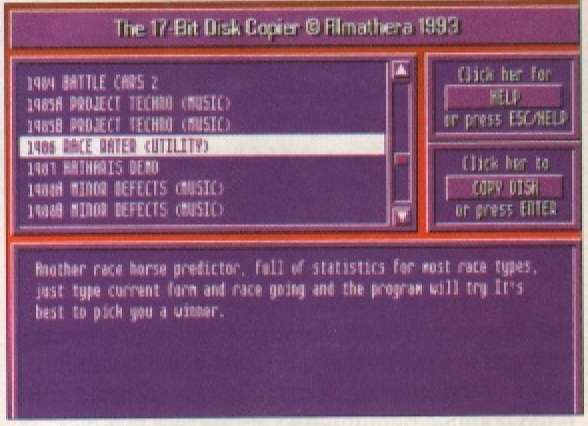
Most of the disk is filled with short demonstration programs to be loaded into AMOS. Covering many areas that are overlooked by the manual, they come packed with explanatory 'REM' statements to help you figure out what's going on. There's nothing radical in the routines themselves, but they should be a big help with your day to day programming.



Available from: Mark Wickson, 49 Perrott Close, North Leigh Witney, Oxon, OX8 6RU. Price: £1.50 (including P&P). Memory: 1Mb. Compatibility: All Amigas.

78%

17 BIT COLLECTION CD-ROM
cd rom compilation



This is the best use of an Amiga CD-ROM I've seen. 17 Bit have filled two CDs with some of the best PD around. There's over 1000Mb of data across the discs, including utilities, demos, games, graphics, music, samples, clip art and animations.

When you boot either of the CDs, you get a rather tacky file selector. Each file has a brief bit of text to go with it, telling you whether it's a utility, clip art or whatever, with a brief explanation of what it's all about. All of the disks have been archived on the CD, so you can't access any of them directly. Instead you need to copy them onto floppies first, and then boot them as usual. It's a bit of shame that you have do this, but it is necessary to ensure that all the software still works as it should.

If you've got a CDTV, you may find that a lot of the disks won't work without extra memory.

This is an enormous source of PD software. For £39.95, you're getting one of the bargains of the century. Anyone with a CD drive should get a copy pronto.

Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH. Tel: 0924 366982. Price: £39.95 (including P&P). Memory: 1Mb plus. Compatibility: CDTV, A500, A500+.

90%

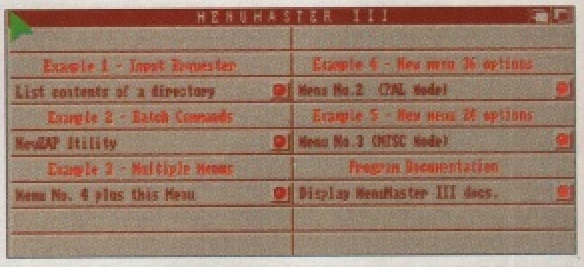
MENUMASTER III
menu creator

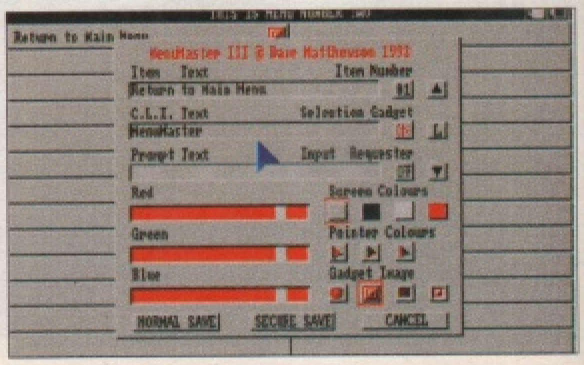
If you release PD software yourself, you've probably got hacked off with trying to make your disks idiot-proof. One of the best options is to put a menu on the front, but what if your programming talents are non-existent? *Menumaster III* will do the trick.

It's by far the simplest and most straightforward menu creator I've used. The creator and the menu are combined in one program. When you boot up, you get a blank menu, which you then fill in to suit your requirements. Each line of the menu has a string of text that's displayed on the screen and a corresponding CLI command. Clicking on the line has the effect of entering the command in the CLI running in the background. You can also use menu options to launch new menus, with more options of their own.

Available from: Alpha PD, 3 Whickham Street, Easington, Peterlee, Co. Durham, SR8 3DJ. Disk no. 181. Price: £1.45 (including P&P). Memory: 512K. Compatibility: All Amigas.

82%





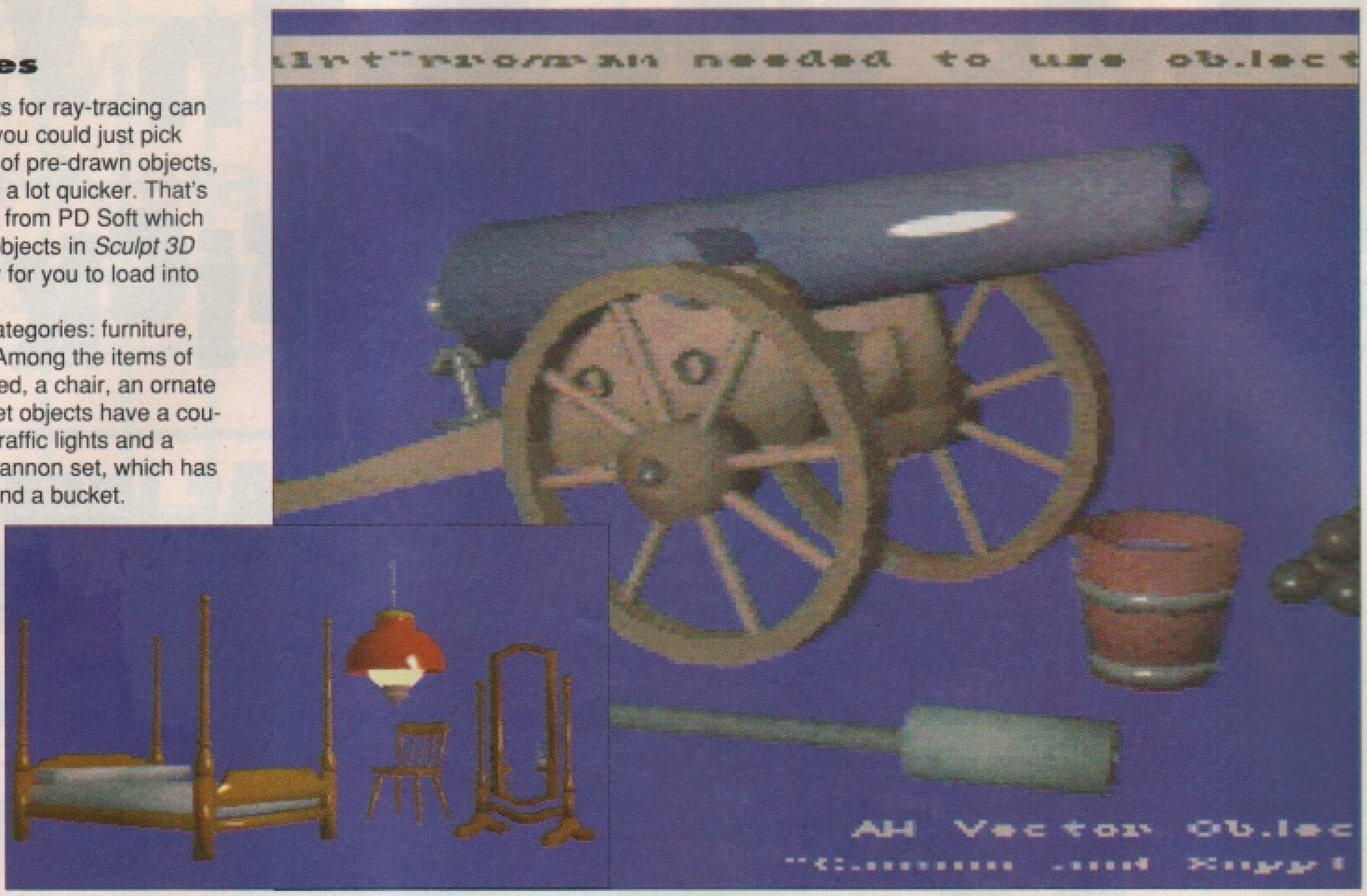
3D OBJECTS
Sculpt 3D files

Building your own 3D objects for ray-tracing can be very time-consuming. If you could just pick what you wanted from a list of pre-drawn objects, the whole process would be a lot quicker. That's the thinking behind this disk from PD Soft which contains 13 quite complex objects in *Sculpt 3D* form, unrendered and ready for you to load into any scene you like.

They're split into three categories: furniture, street objects and cannon. Among the items of furniture are a four-poster bed, a chair, an ornate mirror and a lamp. The street objects have a couple of street lights, a set of traffic lights and a signpost. Then there's the cannon set, which has a cannon, balls, a plunger and a bucket. Rendered IFF screens are included to give you an idea of how they'll look, and very nice they are too.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk no. V1061. Price: £3.00 (including P&P). Memory: 1Mb. Compatibility: All Amigas.

81%



FRACTAL COMPILATION
fractal generators

A batch of seven fractal utilities have been rounded up for this disk, covering the entire range from abstract graphics to landscape generators.

Cloud is an old 2D generator which, as you've probably guessed, specialises in atmosphere and cloud effects. It's a doddle to use, and produces some useful backdrops. By changing between the four default palettes (atmos, earth, water and therm), selecting one of four types of generation, and setting the zoom range, there's a wide variety of images you can create. The save option is disabled, but you can get around this with something like Quickgrab or Grabbit.

A standard Julia set plotter is included which, to be honest, is rather tedious these days. Much more fun is the curiously named *Bez Surf*. This plots strange 3D objects from a screen of scrawled lines and curves. Next there's *Scenery*, an ancient 3D landscape generator. It's not the fastest around, but the results are still realistic.

Mandelshow draws out the usual Mandelbrot set, and *Mandelvroom* does very similar things with a bit more flexibility. *Terrain Sculpt* gives you a 3x3 block of squares, which you click on repeatedly to set each square's height. From this, the computer first generates a 2D fractal relief map, and then a 3D version.

Seasoned fractal-heads probably won't find here they haven't seen before, but if you're new to the game and just want to dabble, this is the best place to start.

Available from: Roberta Smith PD, 190 Fallon Way, Hampstead Garden Suburb, London, NW11 6JE. Tel: 081 455 1626. Disk no. CU103. Price: £1.40 (including P&P). Memory: 512K. Compatibility: All Amigas.

85%



AGA UTILITIES 3
1200/4000 utilities

There's plenty on offer here for all you lucky A4000/A1200 owners – a whopping 10 AGA-orientated utilities are on the menu.

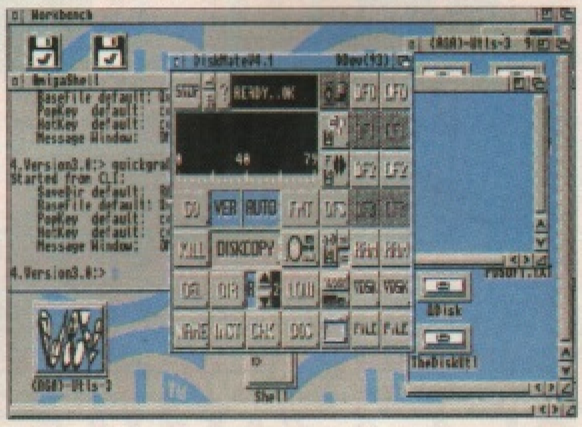
CPU Clear 3.20 is a replacement for the standard Bitclear routine from the graphics library. The optimised routine can speed up certain operations by 60 per cent. *Degrader* attempts to overcome incompatibility problems by emulating the workings of 1.3 and 2.0 machines. Run in conjunction with the alternative boot options (old chip set and so on), you could find a few of your old disks revitalised.

Diskmate 4.0 is a natty collection of disk tools, including a copier, formatter and the disk archiver DMS. *Fast GIF II 1.01* allows you to view GIF graphics files from Workbench. This version has an improved user interface and proper file requestors.

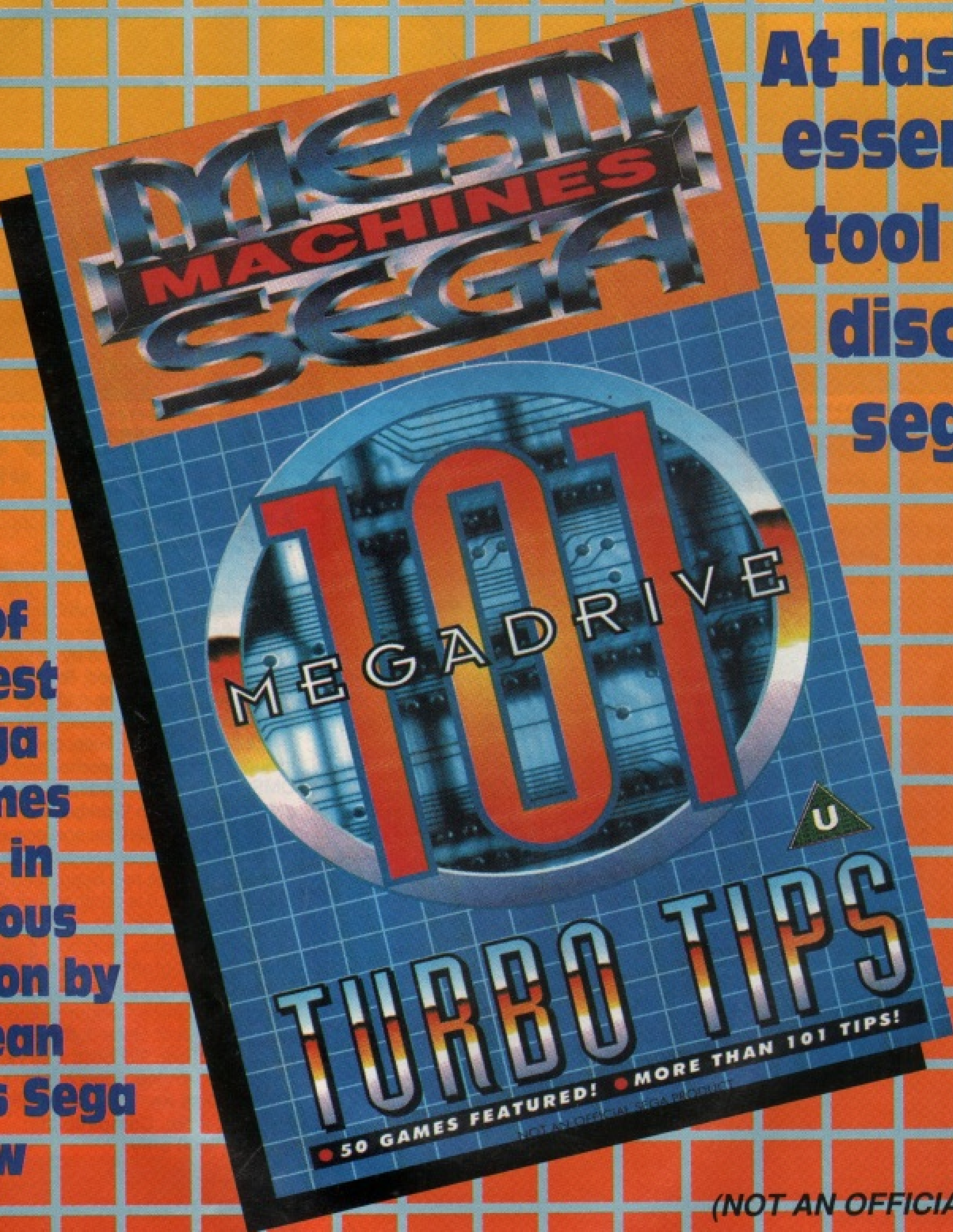
QDisk 1.0 is a simple tool that lets you know how much space has been used on a device, and *The Disk Ute 2.0* is another disk copier/formatter. The difference with this one is that it can handle high density disks. *Workbench Genie 1.02* is an alternative program launcher, and *Workbench Verlauf* gives you a copperlist graduated backdrop using the 16 million colour palette. *YAPS* allows you to open and close public screens.

Available from: PD Soft, 1 Bryant Avenue, Southend on Sea, Essex, SS1 2YD. Tel: 0702 466933. Disk no. V1074. Price: £3.00. Memory: 2 Mb. Compatibility: A1200/A4000 only.

75%



more tips than you can shake a stick at!



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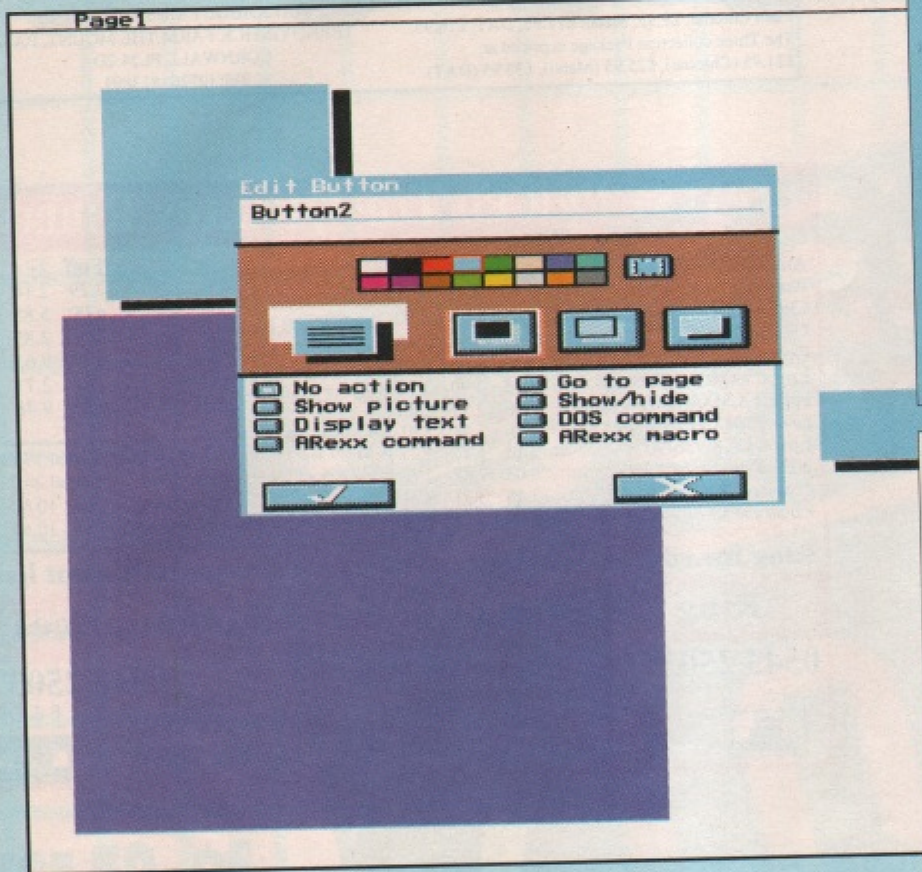
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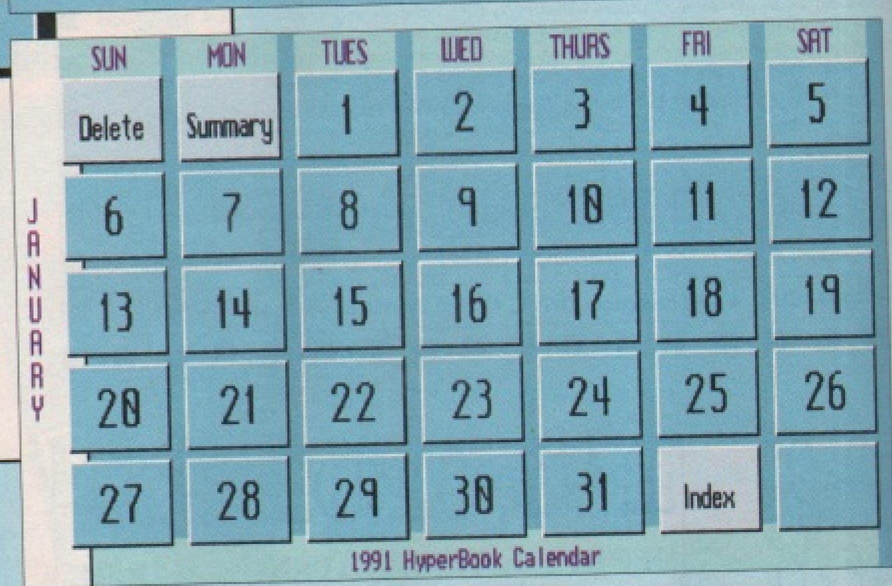
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Having got your hands on the megatastic and popmungous *Hyperbook* software it will not be long before you experience a strange yearning to possess the associated firmware – the *Hyperbook* manuals.

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The second half of this manual details the ARexx port and all the commands available from it – invaluable if you plan to do anything adventurous. This software probably has the most comprehensive ARexx support of any application known to the Amiga, and the only place to find out all the commands available and how to use them is in this book.

And that's not all. The second manual is a guide to creating your own applications. Full of ideas for the office and home, it'll have you creating everything from cookery books to interactive databases.

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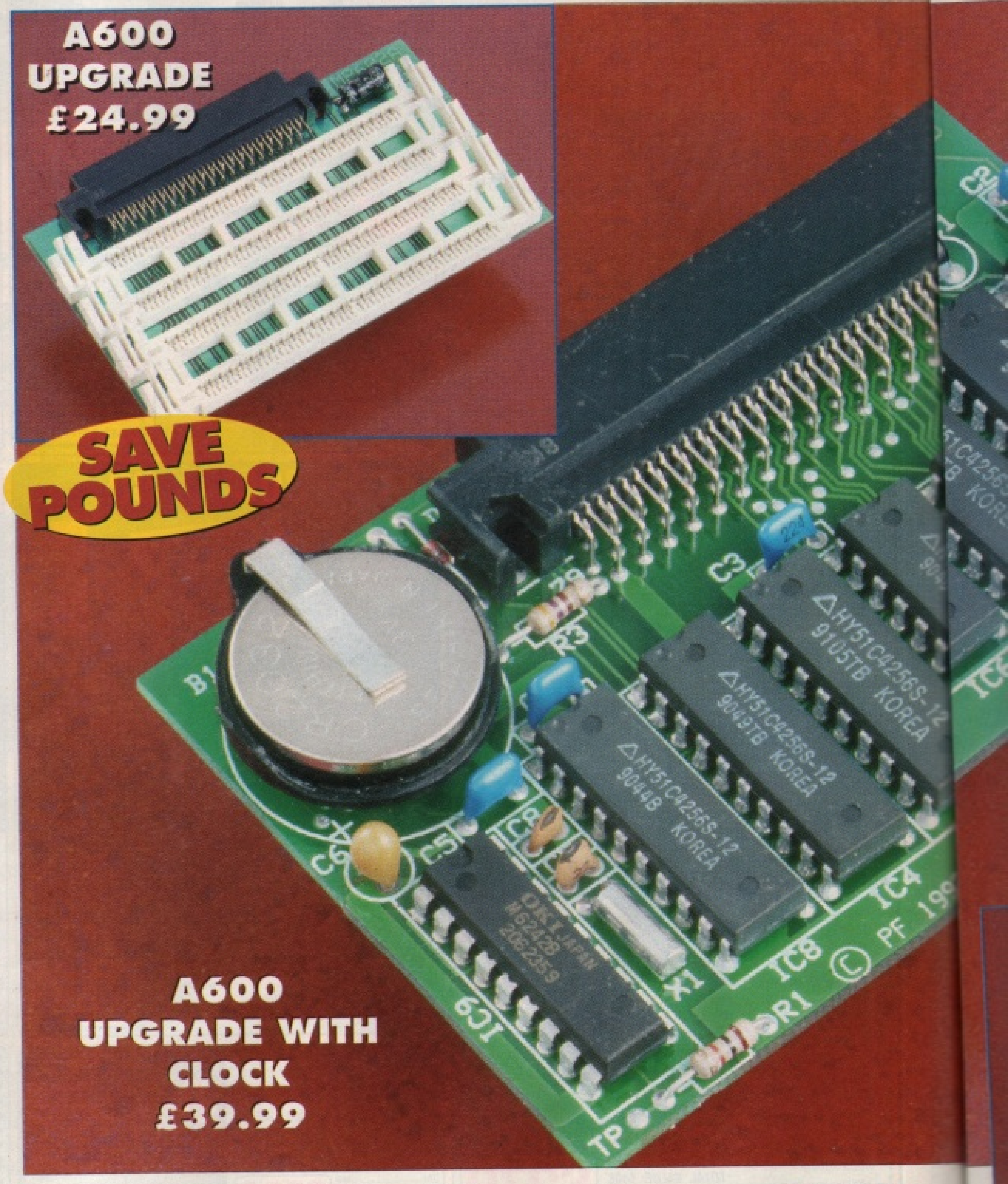
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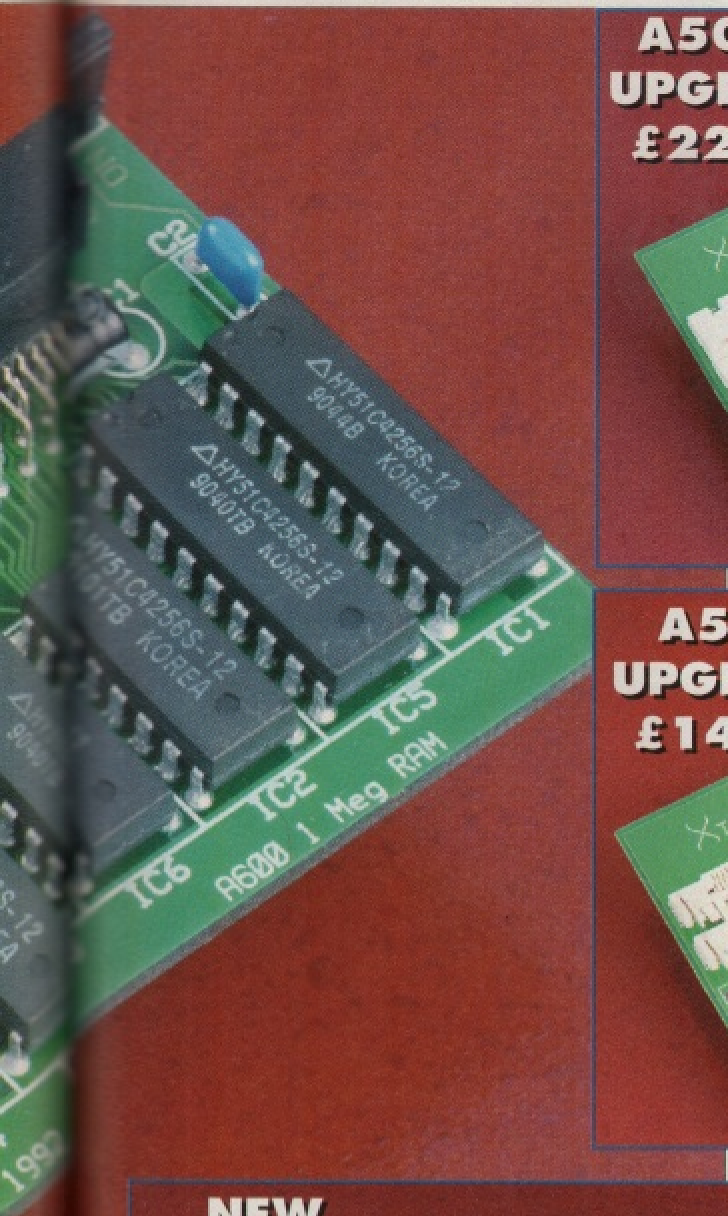
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ISSUE 8 AUGUST 1993



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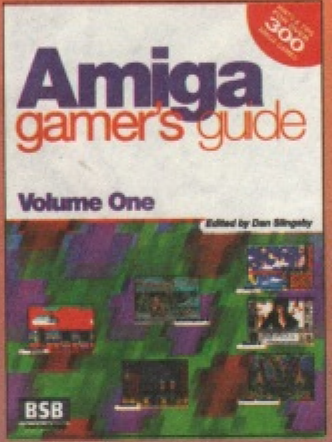
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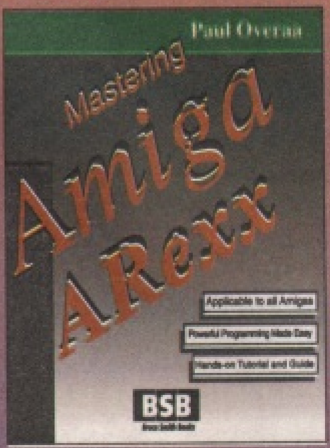
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Paul Overaa, 336 pages, £21.95,
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BOOK SHELF

This month Mat Broomfield takes a look at two books that cover two very different aspects of programming.

MASTERING AMIGA AREXX

BSB

Having already written books on C and Assembly language programming as well as a generic Amiga systems book, it comes as no surprise to learn that Paul Overaa has finally got around to doing one on ARexx.

Mastering Amiga ARexx begins with an obligatory chapter on the origins of the language in which Paul traces its evolution from the IBM right through standalone packages for the A1000 to become one of the few third party products that's not only endorsed by Commodore, but eventually included in their machine's software.

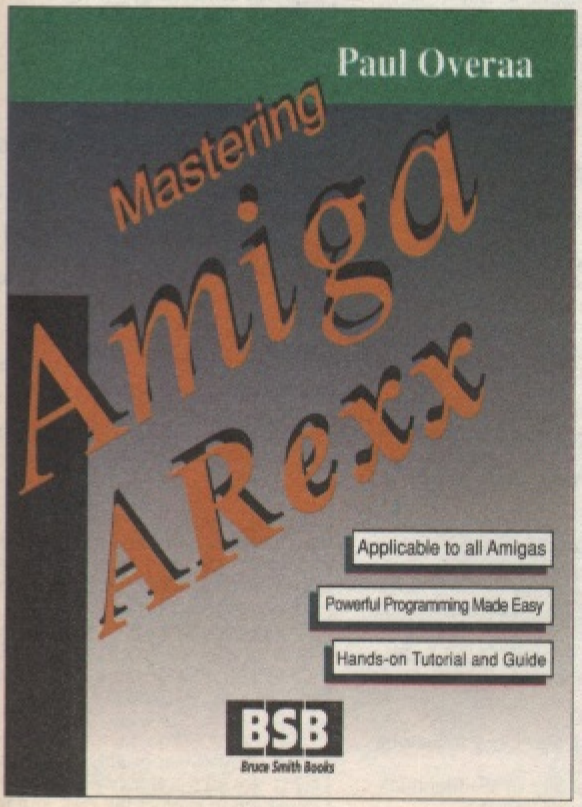
As Paul moves on to describe the advantages of the language over other alternatives and the way it interacts with the Amiga's system architecture, he gets a bit bogged down in tech speak and long words which could very easily intimidate a programming novice.

After describing the basic elements needed for an ARexx program to run properly, Paul quickly dives into programming examples. It's nice to see that he starts with one almost immediately rather than beginning with loads of theoretical stuff that could overwhelm a novice.

At this point it's worth mentioning the fact that the book is accompanied by a free disk of material to accompany the text. This is particularly useful because it avoids the dangers of syntactic and grammatical mistakes whilst you learn. It's also handy because ARexx does not use a dedicated compiler so all programs have to be typed into a text editor before being passed to the ARexx interpreter. The free disk means that you can immediately jump right in without having to learn how to use text editors as well.

The next few chapters deal almost exclusively with the rules and tools of the language without too much specific reference to any particular programs. These chapters are the ones where you will learn the cans and can'ts of the language, and although not particularly exciting, they lay the groundwork for the more interesting material that is to follow.

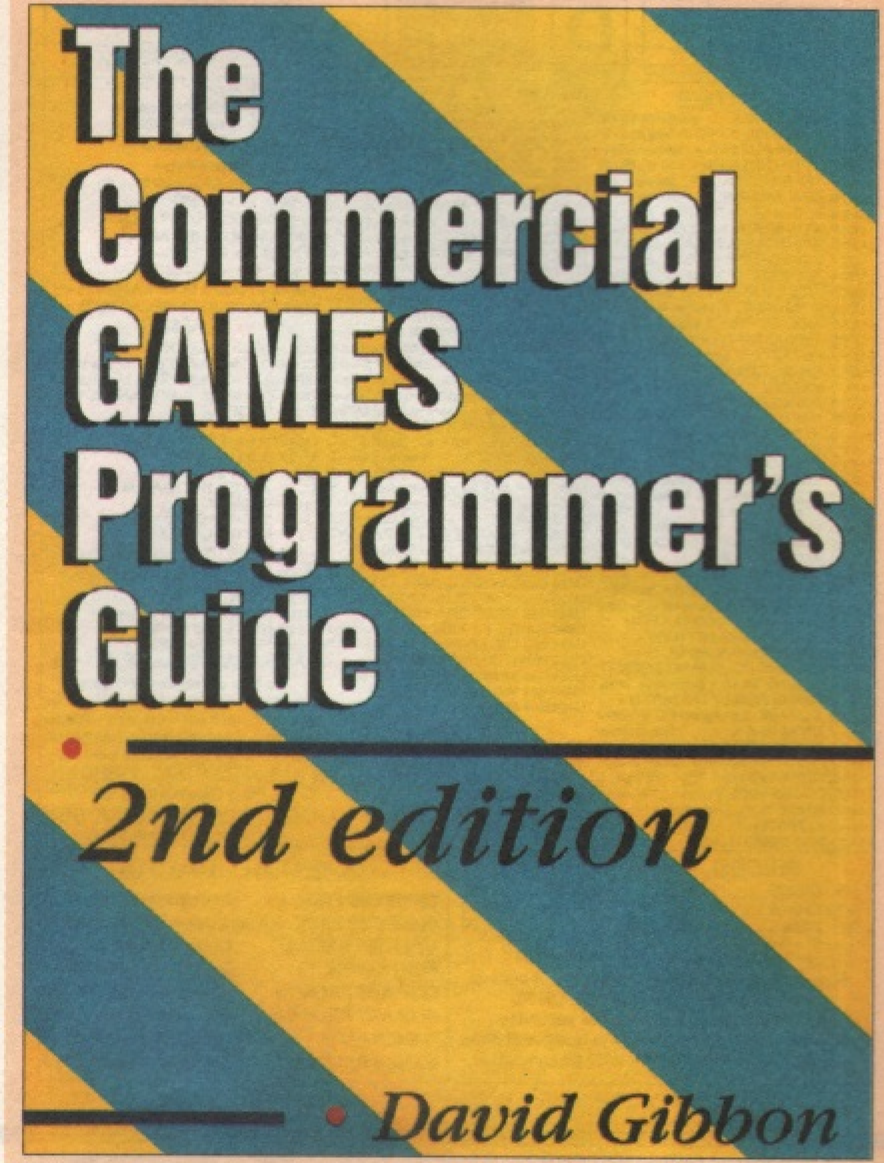
There is a very useful section on debugging, complete with tips and advice. As programming can often be 30 per cent original coding and 70 per cent debugging, it's nice to see this important subject given the prominence it deserves.



Paul also allocates two entire chapters to inter-program communication, demonstrating how the language can be used to pass information back and forth between unrelated programs. I believe that this will become increasingly important in the future, and it's good to see it being treated thoroughly.

Overall, a hefty and generally readable tome giving you all the information you need to learn ARexx.

ISBN 1-873308-13-2, 332 pages, £21.95, Published by Bruce Smith Books Limited, PO Box 382, St Albans, Herts, AL2 3JD. Tel: 0923 894355.



THE COMMERCIAL GAMES PROGRAMMER'S GUIDE 2ND EDITION

KUMA

If you've ever considered entering the games industry as a programmer, designer or artist, this is the book for you. To my knowledge, it's the only title which attempts to give advice to help you enter the industry. Written by Dave Gibbon who is a games programmer himself, the book attempts to give advice on a number of subjects, from choosing a programming language to setting up your own publishing house.

In some ways the information given is quite incongruous. For example, the book starts by saying that it doesn't aim to teach you to program, then there's a large section on learning to program professionally. There's not enough space for a thorough examination of the subject so Dave simply covers the merest basics. And another thing; if, as the title professes, the book is designed to help you to become a 'Commercial Games Programmer', why is so much space dedicated to the Spectrum, Amstrad and C64? I would have thought that it would be commercial suicide to dedicate months or even years learning to program computers which are long dead.

Anyway, that aside, the book does have much merit as a tool for inspiring the creative juices, as well as giving hopefuls a direction to move in.

There's a good chapter on how to get ideas, which comes complete with tips on creating and animating characters, and creating believable movements for computer controlled adversaries.

There's also a section on how to present your games or ideas to software houses. This tells you what these companies look for in a game, and how to analyse the market for popularity trends. If all else fails, there's even a chapter on marketing and publishing software yourself.

The book is concluded with a list of programming packages and accessories for all computers and a software company contact list. At only £9.95 *The Commercial Games Programmer's Guide* represents fair value for anyone interested in this line of work.

ISBN 0-7457-0155-8, 131 Pages, £9.95, Published by Kuma Books Ltd, 12 Horseshoe Park, Pangbourne, Berkshire, RG8 7JW, Tel: 0734 844335.

VIDEO VAULT

Cybervisual trance morphing – all these buzzwords and more can be found in this month's video selection, perused by Tony Horgan.



THE IRRESISTIBLE FORCE

TELSTAR VIDEO ENTERTAINMENT £10.99

For those Condor moments, you might like to take a look at this one from The Irresistible Force. It comes with a warning of its '1.4 Gigatherms chillout factor', and aims to 'transcend the inner chambers of your mind'.

Mixmaster Morris has supplied the soundtrack, all of which is on the ambient side, but maybe not quite what you'd expect. Instead of the long, filter-swept analogue synth sounds that form the basis of many chillout tracks, these are more rhythmical, but still undemanding, which is important when you're cabbaged.

The visuals come courtesy of GJ Productions, the team behind Temple of Kaos. Anyone who's seen either of the earlier two *Dance in Cyberspace* videos will have some idea of what's on offer. Surprisingly, the harsh strobes and spiky vector graphic styles haven't been toned down that much for *The Irresistible Force*. When it flows, it's pretty smooth, but some of the visuals clash with the soundtrack now and then.

It does have its moments though, and the points where it all clicks into place make up for the lower spots. Don't get me wrong – it's just that I was hoping for a complete mong-out session, and this is still twitching from time to time. That's not really a criticism though. If you want something with a bit of life, but don't fancy an onslaught of drum and bass, this could be the ticket.

Available from: Telstar Video Entertainment, The Studio, King Edward Mews, Byfield Gardens, London, SW13 9HP.

78%

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HEX £10.99



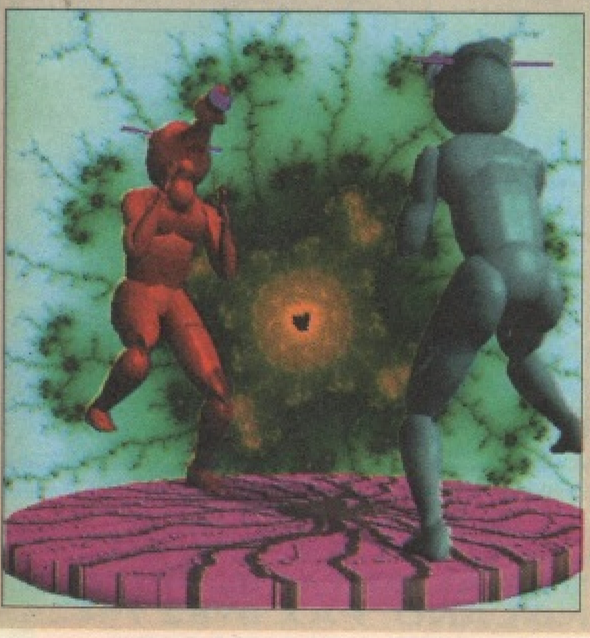
For a full-on techno-visual experience, this is your best bet. Clocking in at a full hour long, it's a non-stop trip from hardcore to ambient, taking a scenic route via techno and house. Amigas featured heavily in the production of the visuals, together with a couple of Macs and Archimedes.

Rather than a continuous barrage of sound and vision, the video has 12 distinct stages, each with its own unique mood, soundtrack and graphics. This is a good idea, and makes a change from some of the never-changing alternatives. For example, if you want to change the vibe, you know you've only got to wind the tape forward or back a few minutes, and you've got a fresh style of graphics and music.

The stars of the show are the ray-traced aliens. These semi-humanoid creatures leap around like mad things, prodding keyboards and performing weird ritualistic dances. Extra spook factor is given to some by the addition of video feedback, a simple technique that results in some freaky effects.

Strobing images of fractals, random colour-cycles, snippets of digitised animations, and clips of real-world video are all mashed up together. Towards the end there's a change to more soothing sounds and gently evolving images, including a flight around a volcano crater, which was submitted by a CU AMIGA reader after seeing our profile of Coldcut a few months ago.

We like this one. Where others make the mistake of being too techie, losing sight of what actually works, *Global Chaos* uses the technology to excellent effect. If you want to catch it live, keep your ear to the ground – Hex and Coldcut are currently VJing at various one-off club nights around the capital.



Available from: HMV, Virgin, Our Price, Tower Records and all major video retailers. For further information, contact Imagine on 071 734 7372.

90%

DR DEVIOUS AND THE TEMPLE OF KAOS

GJ PRODUCTIONS £10.99

This is the third video from the brains that brought us *VR Dance in Cyberspace 1+2. Temple of Kaos* is a continuation of the theme, and even though the name has changed, the idea is the same.

It's another 45-minute job, and in terms of mood, this is more along the lines of *Global Chaos* than *The Irresistible Force.* The soundtrack's by Dr Devious (Guru Josh in a former life), and pumps along in a trancey kind of vein, but more melodic than a lot of the current club sounds, which is probably better suited to home listening anyway.

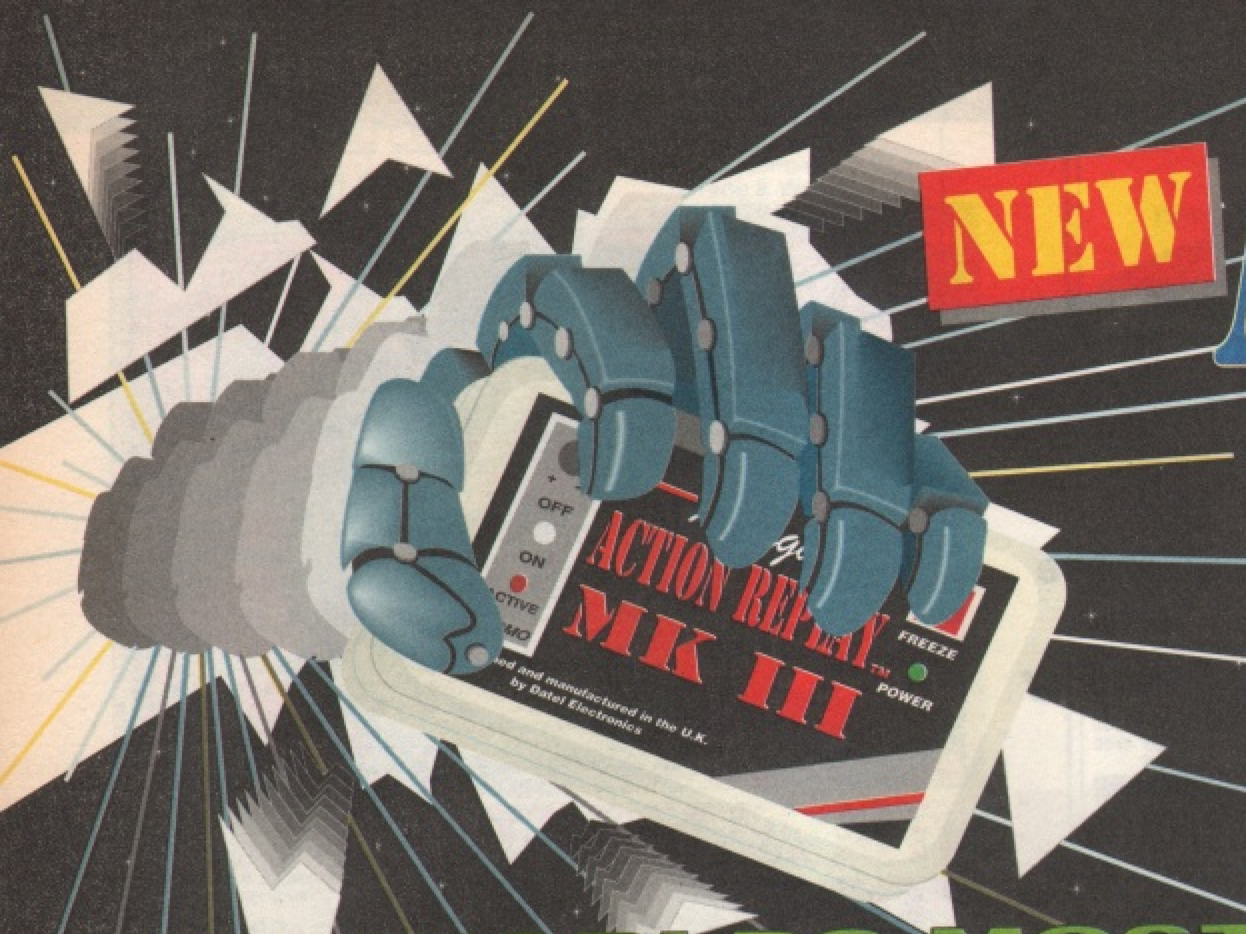
Bags of technical trickery has gone into the making of the video – mainly Amigas and souped-up PCs for most of the fractal animations, strobes and 3D objects. Quite a lot of it's also been through a VideoToaster. On top of the graphics, there's a human element in the form of chromakeyed faces and dancers, and some of the old favourite effects from *VR 1+2* make another appearance.

Most of the raw sequences are pretty good, but a lot of the effect is lost when too many images are faded together. More is less in this case. Even so, there's plenty to keep you interested, from the 3D worlds to the abstract 2D images. It would have been nice to see some more variation from the format of the first two *Cyberspace* videos – if you have either of those, most of this will look very familiar. However, newcomers should have plenty to get stuck into.

Available from: All major high street video retailers. For further information contact GJ Productions on 081 995 2723.

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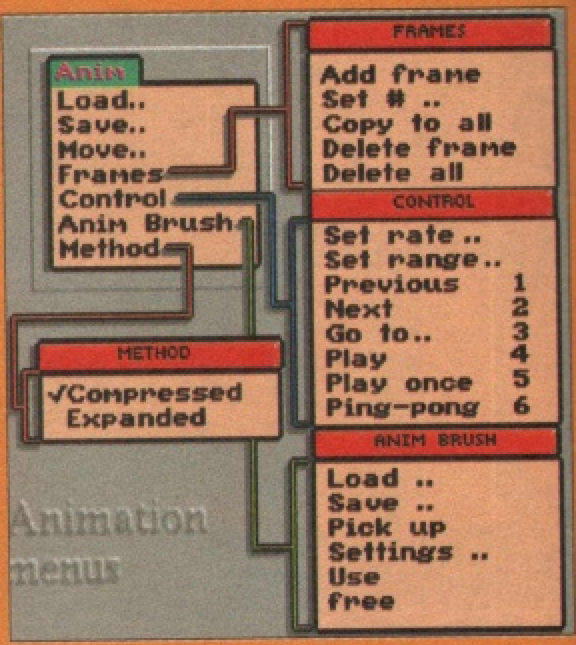
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DELUXE PAINT PART 7



The Anim menu structure opens the door to *DPaint*'s real power. If you have sufficient memory, or only a short animation then select Expanded from the Method option. This takes up much more RAM than Compressed, but leads to smoother presentations. We'll be delving further into this area next month.

Over the past six months we've been laying bare *DeluxePaint*'s artistic soul. But at the heart of the program is one of the most powerful animation systems on a home computer. This month Peter Lee undoes the nuts and bolts in a bid to get you moving...

It's often said that *DeluxePaint* is the yardstick by which Amiga art packages are measured. But really it's in a class of its own for completeness. This didn't happen overnight; Electronic Arts has always had its rivals, but *DPaint* only hit top spot with version III, and the reason was the inclusion of animation. *DPaint* has evolved to version IV now, with much more animation control than before. But the basics remain intact, and although initially we'll be concentrating on getting things moving in *DPaint III*, it's still relevant to *DPIV* users.

DPaint needs computer RAM to store its images in as you work on them. When drawing single images this rarely presents a problem on machines with the minimum of RAM, but for animation work you really do need as much memory as you can get. Anything less than 1Mb of RAM will prevent you from creating lengthy or complex animations, and even then you may find a meg just too restricting. Another factor in determining the number of frames is how complex your screen animations are. If lots of things are moving then *DPaint* will have to store more information, which leads to bigger RAM overheads. This is because the program saves the differences between animation frames rather than the whole frame.

TIP: To minimise storage overheads on an animation, try to keep the background static.

QUICK KEYS

Quick keys for controlling animation (note – these keys are on the main keyboard, not the numeric keypad)

1 – Move to previous frame
2 – Move to next frame
3 – Go to frame (enter number in requestor)
4 – Play animation continuously
5 – Play animation once
6 – Play animation in ping-pong mode (Forward <-> Back)
7 – Move to previous Anim Brush cell (if animbrush defined)
8 – Move to next Anim Brush cell (if animbrush defined)

SHIFT and the following
1 – Go to first frame
2 – Go to last frame
3 – Go to the frame you last did a 'go to' to
4 – Play animation continuously backwards
5 – Play animation once in reverse order
7 – Go to first Anim Brush cell (if animbrush defined)
8 – Go to last Anim Brush cell (if animbrush defined)

OTHER KEYS

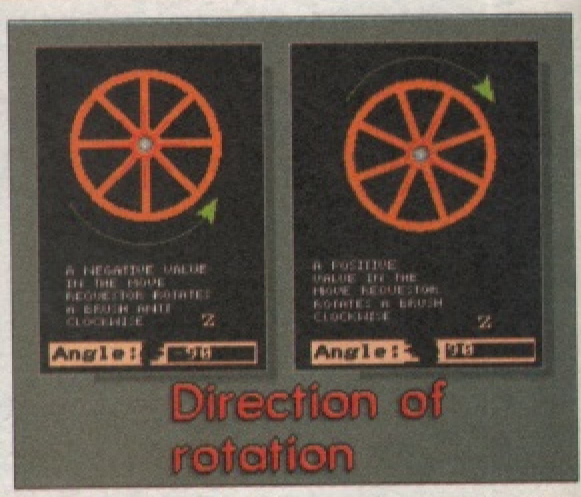
M –	Move requestor
r –	Reverses animation while it is playing
Space bar	Stops animation playing
Left arrow	Slows down animation as it plays
Right arrow	Speeds up animation as it plays
ALT –	When used while painting, turns on anim painting.

DOWN TO BUSINESS

When you start *DPaint*, it defaults to a single drawing screen. To create an animation you need to tell the program how many frames you intend using, and the way to do this is to pull down the Anim menu, and from the Frames item select Set # (which is American for set number!). Actually you have an earlier choice which affects the way your animations are stored by the program. When I mentioned that *DPaint* stores the differences between each frame in its Anim file, I was only giving half the picture. If you want, you can have the frames stored in a file of complete screens. This can take up vast amounts of memory and disk storage space – it's like saving as many single screens of artwork as you have frames in your animation.



The *DPaint* Move requestor allows you to choose to animate using the screen or brush co-ordinates. The difference is apparent here. If you have altered the perspective of your brush (lower right) and choose Brush co-ordinates, *DPaint* will animate in perspective.

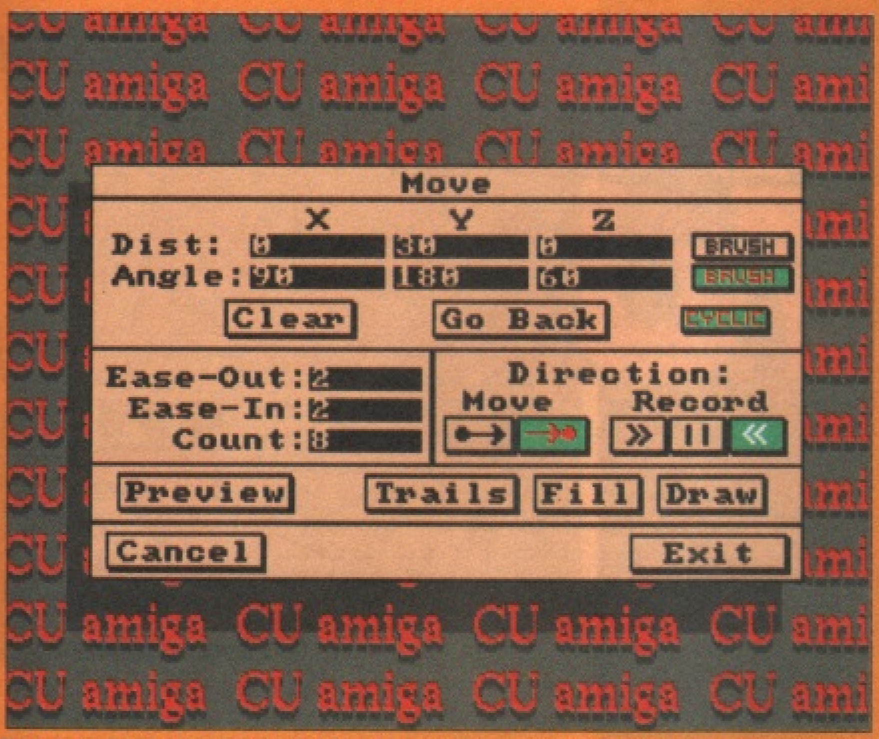


Putting minus values in the Move requestor rotates or moves brushes in the opposite value to positive values.

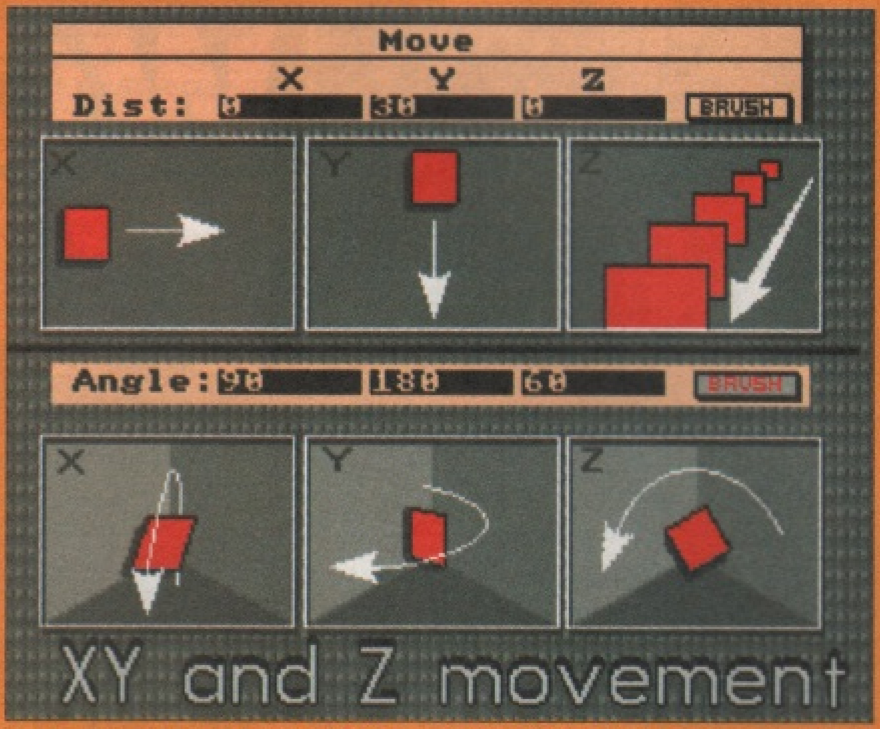
So why bother? Because *DPaint* doesn't have to do any decompaction as it plays through your sequence it can play them more fluidly. *TIP:* If you choose expanded, there's no need to guess how many frames your animation will hold. The program calculates how much free RAM you have, and offers the total number of frames you can use in the Frame # requestor.

FIRST STEPS

DPaint's Move requestor can be off-putting at first – it's chock full of options. But once you know what each feature does, you will find it easy to control complex movement. We'll be moving onto that later, but first we need to understand the basic procedures. First things first – you need a custom brush to move about. This can be anything from a drawing to a coloured shape, text or a digitised image. Once you've cut it out with the brush tool (or loaded in an image as a brush) you can call up the



Once our animation tutorials are finished this powerful requestor will be an old friend. Meanwhile check out this month's tutorial for the first part on mastering its effects.



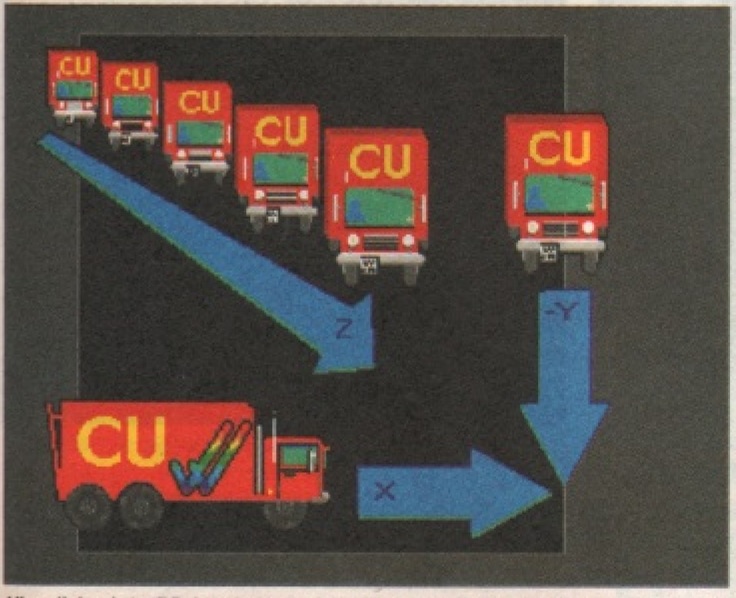
It's sometimes hard to envisage how *DPaint* 'imagines' a 3D world. Here I've represented the effects available in the Move requestor's Dist(ance) and Angle boxes.

Move requestor (Keyboard M) and enter the values the program needs to calculate the animation.

TIP: *DPaint* works out the path of your brush based on its last position, which is initially where you clipped it from. You can create a new position by stamping the image down on-screen in the location you want. If there's something on-screen already in the place you want the brush to be animated, click Undo immediately after stamping down the brush. If the area is just background colour, stamp the brush down by using the right mouse button.

MOVING THINGS

The first row of figures in the Move requestor is headed Dist:, and typing values here affects the way your brush moves on the screen. X and Y refer to horizontal and vertical movement respectively. Z is more complicated, but if you followed our earlier tutorial on perspective you should remember that's the imaginary plane which stretches 'backward' and 'forward' from the front of the screen. Giving a minus value in any of the Distance options will make your brush move in the opposite direction. To recap – a value of 100 in the X Distance box will move your brush 100 pixels horizontally across the screen; the same value in the Y box moves the brush up, and entering 100 in the Z box will appear to diminish the brush by moving it back from your point of view. The identical measurement boxes labelled Angle work similar magic, but they give the X and Y plane depth by allowing 3D rotations to be made. Imagine the effect of using the Y angle as a coin spinning in one spot on its edge on a table; the X angle is like a coin being flipped in the air, and the Z angle is like the coin rolling along the floor. You can use any of these six boxes individually or in conjunction with each other. In this way you can define complex movement paths to rotate brushes as they move across the screen.



Visualising how *DPaint* mimics real-world space is half the battle to pre-planning your animations. Here you can see how a brush would travel in the X,Y and Z planes in the Move Dist. requestor.

SPINNING'S TOPS!

The three buttons to the right of the main requestor cause most confusion. People tend to ignore the two Brush boxes and the one labelled Cyclic. If you leave them as their default state you'll still get an animation, but it's worth taking the time to find out what they do. Here's how they affect what's happening on screen. The two Brush boxes control whether *DPaint* rotates the current brush along the screen axis or along the brush's own axis. A tick in either box shows that it's the brush axis which is being used, and each box refers to the Distance or Angle settings alongside it. You can have one, both, or no boxes ticked. If your brush is a straightforward screen clip, then the boxes will have no effect. If you have a brush which you have rotated in perspective, the brush will have its own co-ordinates, and it is these which *DPaint* will use to calculate any movements you request. By clicking on the Cyclic box, you tell *DPaint* to seamlessly end the brush animation in relation to the brush's starting position; this means that if you spin a brush around 360°, the final frame is not drawn with a 360° turn. If it were, it would be identical to frame one, and you would have a momentary pause during playback as identical images were shown. Instead *DPaint* compensates for the starting position.

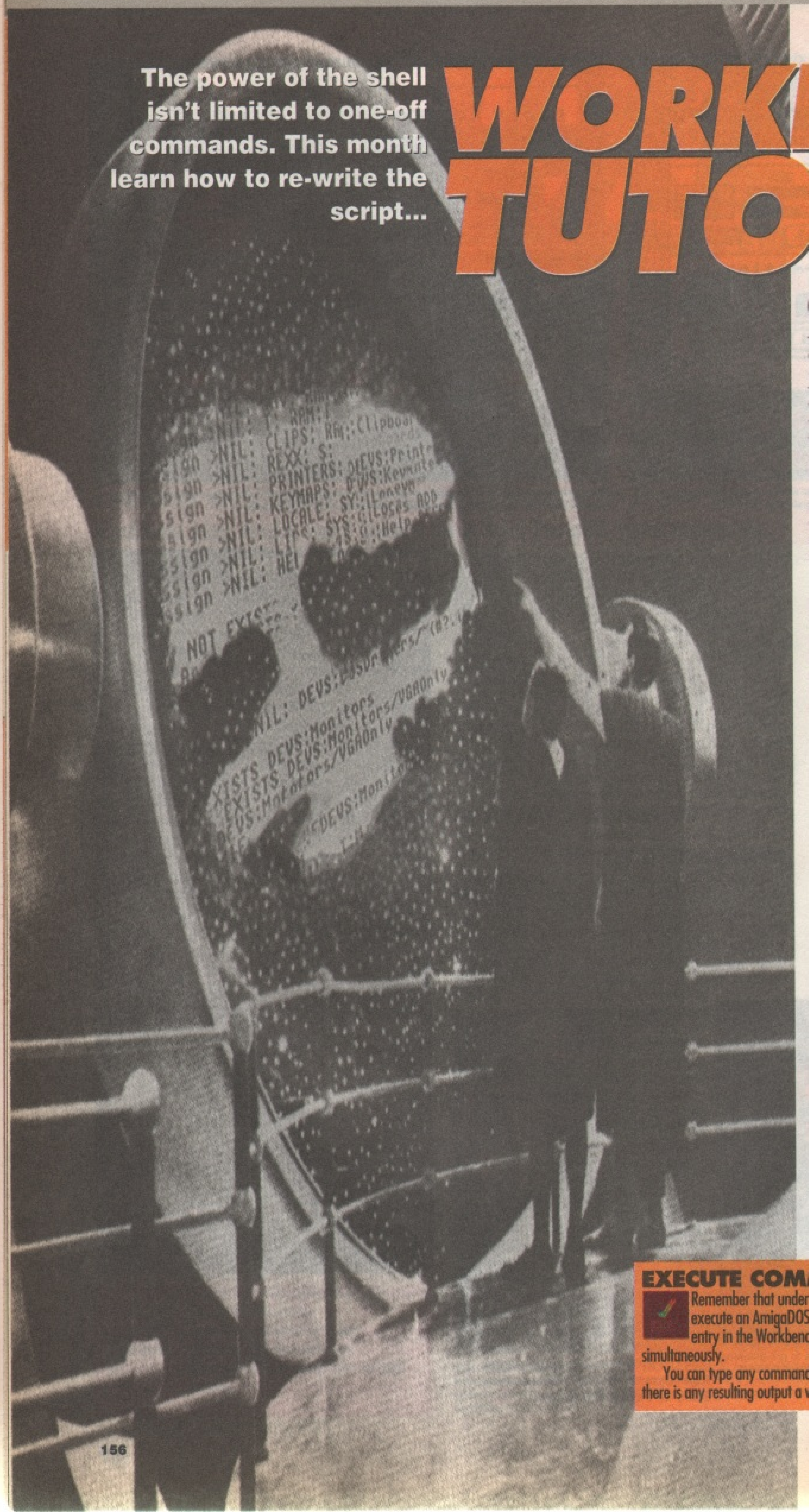
THE OTHER SIDE

One neat effect is a spinning object. In our example we've a simple plaque which revolves to show two sides. Draw your initial image and copy it. Place your text on each image and switch to the blank alternate screen. Create a 20-frame animation. Cut out the first image as a brush from the spare screen and move back to the first frame, marking the position of the brush by clicking with the right-hand mouse button. Call up the Move requestor and in the Count box enter 10. Type 180 in the Angle Y box and click on Draw. Your brush will be drawn and rotated through 180° over 10 frames. Move back to the spare page and pick up brush number 2 with the alternative text on it. Go back to the animation, and to frame 1. We have to show *DPaint* that this new brush will be in the same position as the old one, so we need to stamp it down. Cover up the original brush in frame one exactly with brush 2, and click. Immediately Undo the move. Now go to frame 11, and call up the Move requestor again. All you need to do is click in the Record << box, which tells *DPaint* to animate backwards, and click in the Move box with the arrow pointing towards the blob. Select Draw again, and the brush will be painted on screen for the remaining 10 frames. When played back, your animation should show both sides of the brush revolving.



NEXT MONTH

Peter Lee delves further into the most effective way of controlling your animations, with advice and tips to let you squeeze every ounce out of *DeluxePaint*. We'll also be looking at more hand-made animation techniques.



The power of the shell isn't limited to one-off commands. This month learn how to re-write the script...

WORKBENCH TUTORIAL

PART 6

One of the things that puts the Amiga way ahead of the PC is its friendly and powerful Graphical User Interface (GUI). This is all very well, but the Apple Macintosh has a friendly and easy to use GUI, too. Well, one of the things that puts the Amiga way ahead of the Mac is its powerful Command Line Interface (CLI). You must often have happened upon a set of circumstances where a seemingly easy task is made impossible by the constraints of the GUI. These occasions are a job for the CLI, but there are also instances where the CLI can make the GUI easier to use.

FIRE AND FORGET

The CLI doesn't have to be a simple solution. Everyone knows that it is the most direct and effective method of performing a wide range of everyday tasks. Even with the complexity of something like Workbench 3.0, there are still some tasks which are easier to perform in the Shell.

A knowledge of AmigaDOS commands is essential if you wish to customise your setup on a 1.3 machine, and it is still a worthwhile area of the machine to explore if you have the very latest Amiga.

Although you may have used the Shell or CLI in 'direct mode', where every command is executed as you type it in, it can be useful to put a series of commands together in a script. This is just a list of commands, each on a separate line, which will run

1.3 STARTUP

STARTUP-SEQUENCE

```
Addbuffers df0:10
C:Setpatch >NIL:
cd C:
echo "A500/A2000 Workbench disk
Release 1.3 Version 34.19*N"
Sys:System/FastMemFirst
BindDrivers
Setclock load
FF >NIL: -0
resident CLI L:Shell-Seg SYSTEM pure add
Resident c:Execute pure
mount newcon:
Failat 11
run execute s:StartupII
Wait >NIL: 5 mins
SYS:System/setmap USA1
path ram: c: sys:utilities sys:system s: sys:prefs add
LoadWB delay
endcli >NIL:
```

EXECUTE COMMAND

Remember that under Workbench 2.0 it is not necessary to open a shell or CLI to execute an AmigaDOS command. All you have to do is use the 'Execute Command' entry in the Workbench menu. The hotkey for this command is Amiga & E held down simultaneously.

You can type any command you like into the gadget which appears on screen, and if there is any resulting output a window will be opened to display it.

1.3 STARTUP

STARTUPII

```
Resident c:Resident pure
resident c:list pure
resident c:cd pure
resident c:mount pure
resident c:assign pure
resident c:makedir pure
makedir ram:t
assign t: ram:t
makedir ram:env
assign env: ram:env
makedir ram:clipboards
assign CLIPS: ram:clipboards
mount speak:
mount aux:
mount pipe:
resident mount remove
resident assign remove
resident makedir remove
break 1 C
```

in sequence when the script is executed.

The most important scripts you are likely to come across are the ones which lurk in the S: directory of your startup disk. The most important of these is the one called 'startup-sequence' as this is the very first thing to be executed when you turn your machine on.

STARTING UP IS HARD TO DO...

One of the major difficulties people face under AmigaDOS is not due to some software failure or badly coded program, but simply because the system has not been set up correctly.

Usually this is the fault of some installer not doing its job properly, some file in the wrong place or a startup sequence that isn't working right. The Startup-sequence is a small piece of code which is the file which is executed when the Amiga starts up. Everything else that happens at startup – preferences, Workbench loading, directory assigns, commands being copied to memory – all these are performed by the startup sequence. But, this magic bit of code isn't some nasty compiled object file, it is just a script file, written as a sequence of CLI commands. The examples on these pages show the standard startup sequences supplied with Workbench 1.3 and 2.0.

The old 1.3 startup is a bit complicated. Initially, buffers are added to the drive and the system setpatch is run. FastmemFirst is a utility which forces the system to use any expansion RAM ahead of valuable on-board Chip RAM. FF is a utility which patches the AmigaDOS font system to speed it up.

After that a variety of system commands are made resident and a second script is executed. The startup sequence waits for this extra script to finish, then opens Workbench and closes its window.

The second script is used because it can take advantage of all the resident commands. This sets up a few directories in RAM to store temporary files (t:) and environment variables (env:).

If you want to add anything to this script, it is better to add it to the second script. Typical additions would be directory assigns or running useful utilities at boot-up. If you wanted to have a directory called 'tempwork' which you could treat as a separate logical device, all you would have to do to the startup-sequence is add the line:

```
Assign Tempwork: Hard:temp
```

as you would if entering the line at the CLI.

The usefulness of having these commands entered at startup is that the whole way your AmigaDOS system works can be altered. If, for example, you had a CD drive connected which contained all your fonts, you could use the startup sequence to assign the system font directory to be the CD device. Every time the system, and consequently any time that any Workbench friendly program, tried to access a font it would be redirected to the CD drive.

Under system 2.0 and up, startup sequences get a bit more tricky. The first thing to be considered is the fact that all the commands, up until 'IPrefs' is called, are all patched so that their output is redirected to the Nil: device. Effectively this means that no window is opened until halfway through the sequence, which accounts for the apparent delay at startup. There is a good reason for this, and it appears immediately after all the system assigns have been made. This piece of code cunningly creates a script file, containing the complete pathnames of every monitor currently stored in the Devs:Monitors path of your startup disk. All of the preference settings, are set up by the IPrefs command.

This leaves the secondary startup file (user-startup) free for customised assign statements. The example shown here is of a hard disk based machine with a few commercial programs already installed. Well written installer programs will include any device assigns or special commands they need in a file called 'user-startup' or 'startupII', which is where you should put yours. If you do not put comments in this file (comments begin with a ';') it will be very hard to remember exactly which commands are relevant to which piece of software.

DOING IT WITH ICONS

For a script to be run from the CLI or Shell, you use the 'execute' command. This tells the operating system that the file is not an executable object file, such as would be produced from a compiler, but rather a script file of AmigaDOS commands.

Whilst this undoubtedly saves time, it is still a bit of a chore to enter the CLI to access the commands in the first place. Well, you don't have to.

There is another Workbench command called IconX which is designed specifically to link script files to Icons.

The first thing to do is create your script and give it a name. Now you can create an icon. All script files should be given a 'Project' type of icon, which means that it requires a 'Tool' to run properly.

Under Wb1.3 this means that you will have to copy the icon from a file which already has this type of icon. A typical project-type icon is the 'pointer' icon in the Prefs drawer. Simply copy this using the command:

```
copy :prefs/pointer.info :script.info
```

assuming that your script file is called 'script'. Select the icon from Workbench (you may have to close the disk window and re-open it for the icon to appear) and select 'Info' from the Workbench menu.

In the 'default tooltype' gadget you should delete the text referring to Prefs and insert: 'C:IconX' in the gadget. Delete the extra 'tool types' text and click on save. Your Script now runs from the Workbench without you having to type anything.

In Workbench 2 and above you can use the IconEdit tool supplied with the Amiga to create a suitable Icon. Draw whatever you like, but remember to set the tooltype to be a 'Project'.

Once saved (with the name 'script.info') you should alter the tool types by clicking once on the Icon and selecting 'Information' from the Workbench 'Icons' menu. Edit the Default Tool gadget to contain ' C:IconX' and save it. All you have to do now is double-click on the icon to run your script. CU

NEXT MONTH

It's all change next issue as we leave the Workbench behind and concentrate on a brand new series aimed at the novice Amiga user.

Workbench 2.0 startup

```
$VER: startup-sequence 39.9
(9.8.92)
C:SetPatch QUIET
C:Version >NIL:
C:AddBuffers >NIL: DF0: 15
FailAt 21
C:MakeDir RAM:T RAM:Clipboards
RAM:ENV RAM:ENV/Sys
C:Copy >NIL: ENVARC: RAM:ENV ALL NOREQ
Resident >NIL: C:Assign PURE
Resident >NIL: C:Execute PURE
Assign >NIL: ENV: RAM:ENV
Assign >NIL: T: RAM:T
Assign >NIL: CLIPS: RAM:Clipboards
Assign >NIL: REXX: S:
Assign >NIL: PRINTERS: DEVS:Printers
Assign >NIL: KEYMAPS: DEVS:Keymaps
Assign >NIL: LOCALE: SYS:Locale
Assign >NIL: LIBS: SYS:Classes ADD
Assign >NIL: HELP: LOCALE:Help DEFER
IF NOT EXISTS SYS:Fonts
       Assign FONTS:
EndIF
BindDrivers
C:Mount >NIL:
DEVS:DOSDrivers/~(#?.info)
IF EXISTS DEVS:Monitors
       IF EXISTS
DEVS:Monitors/VGAOnly
              DEVS:Monitors/VGAOnly
       EndIF
       C:List >NIL:
DEVS:Monitors/~(#?.info|VGAOnly) TO T:M LFORMAT
"DEVS:Monitors/%s"
       Execute T:M
       C:Delete >NIL: T:M
EndIF
SetEnv Workbench $Workbench
SetEnv Kickstart $Kickstart
UnSet Workbench
UnSet Kickstart
C:IPrefs
C:ConClip
Path >NIL: RAM: C: SYS:Utilities
SYS:Rexxc SYS:System S: SYS:Prefs
SYS:WBStartup SYS:Tools
SYS:Tools/Commodities
IF EXISTS S:User-Startup
       Execute S:User-Startup
EndIF
Resident Execute REMOVE
Resident Assign REMOVE
C:LoadWB
EndCLI >NIL:
```

USER STARTUP

```
assign cgfonts: sys:cgfonts
assign PPage: hd1:ppage
assign DOpus: hd1:DirectoryOpus4
;BEGIN FRED
assign ADP_FRED:
"Work:Artstuff/ADPro2"
;END FRED
;BEGIN MorphPlus (ADProScripts)
assign ADPROSCRIPTS: "REXX:"
;END MorphPlus (ADProScripts)
;BEGIN FRED (FREDScripts)assign
FREDSCRIPTS: "Work:REXX"
;END FRED (FREDScripts)
;BEGIN ImageFX
Assign ImageFX:
Work:Artstuff/ImageFX
;END ImageFX
```

VIDEO TITLING ON YOUR AMIGA

Continuing his awesome titling series, Jim Strutton, head of the Amiga Video Producers Group, reveals a host of handy hints for the Amiga videophile.

PART 2



Despite the implication of its name, *VideoTitler* is capable of much more than merely adding text to your videos. Use it inventively, and it can become a valuable tool for video post-production. This month we'll start by looking at its potential for creating backgrounds.

Load up *VideoTitler* with any preferences you may have set before. On a clear screen, select a Polyfont and type in a small amount of text. Now stretch it until it is about half the width of the screen and adjust the height accordingly. In my example I have typed 'AVPG'. Stamp it down anywhere on the screen with the right mouse button and then pick it up as a text clip, using 'Edit>Clipboard>Set to Text' from the pulldown menu.

Adjust the clip box to make sure you pick up all the text, and then click on the right mouse button to save it to the clipboard. Now clear the text using either the menu option or a combination of the Right Amiga and C keys.

From the menu, select the 'Edit>Paste>Tile full' option. The clip box will reappear, so position it in the upper left corner of the screen and click the right mouse button. The text clip will tile all over the screen. For a different effect, use the 'Display>Quarter>4/4' option from the menu, which puts a 1/4-sized copy of the full screen in each corner of the display.

You may have to use a bit of trial and error before you get this just right, but you can size the text by moving the sides of the clip box and repeating the tile exercise. You can also use the other options on the Display menu to Invert, Mirror, Compress or Duplicate the screen background for more creative effects. Experiment to see what effects you can come up with..



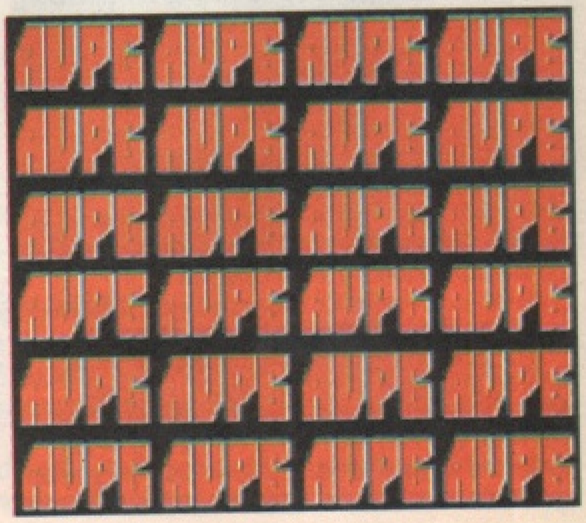
The tile option is a handy shortcut when you're creating backdrops. You can use teselating patterns for stranger effects.

TRANSITIONAL BACKGROUNDS

To create a quick background, try using the options under the 'Edit>Clear' menu. The first option clears the screen to colour zero, and the second clears to any solid colour from the current palette.You can also set up a gradient fill.

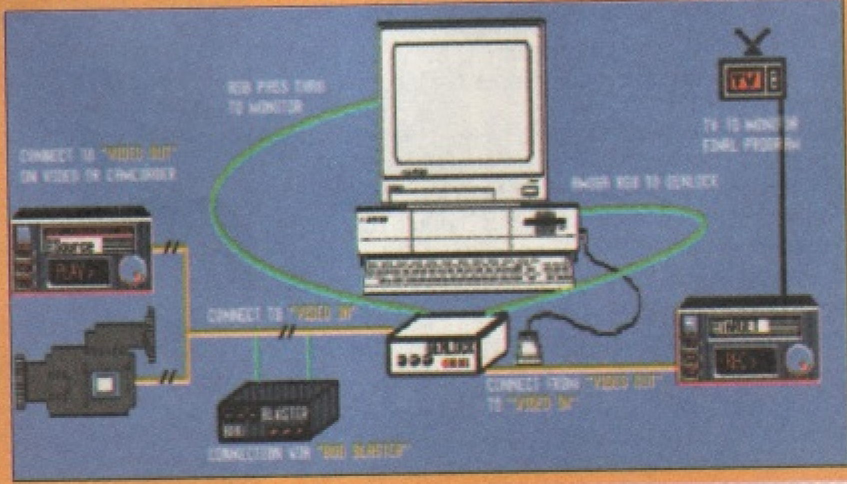
To get a smooth transition from one colour to the next, you should first set up a palette that gradually mixes in elements of red, green or blue into the current colour. You can then set the gradient by selecting the first and last colours in the range when prompted. The only problem is that on interlace, the screen can tend to flicker badly unless you select the colour range with care.

The Blocks option sets up a grid, with a fixed size matrix, over the top of a solid colour background. Again, choose your colours carefully, or it will flicker like mad. The final option puts up a test grid in a fixed colour, which shows the borders of the screen image. You use this to test the screen position and size when using overscan. Some video equipment shows images in a more com-



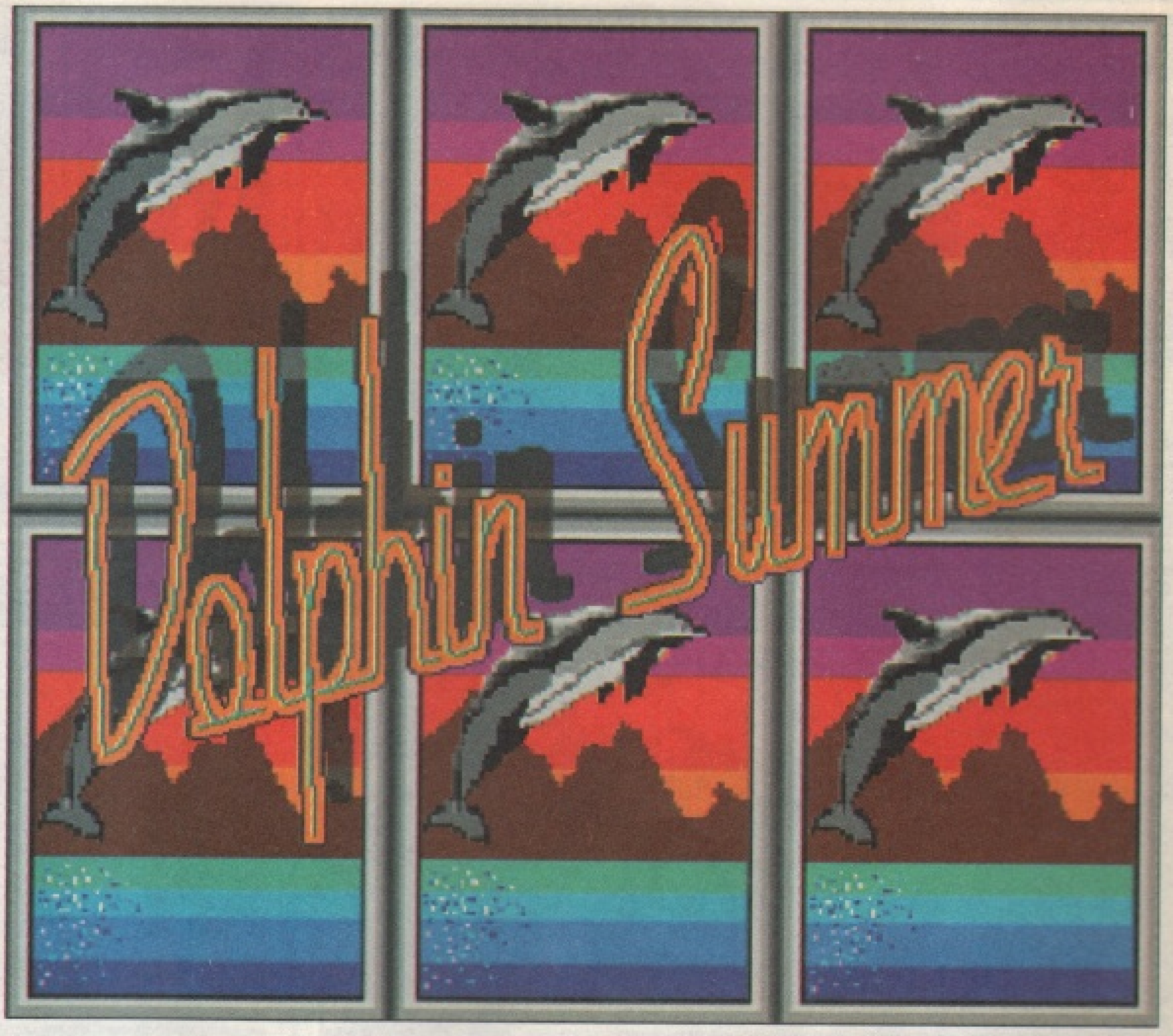
TROUBLE SHOOTING

A frequent problem that would-be users find is that the Amiga picture becomes unstable when the Genlock is connected. The most common cause is that the heads are dirty on the source video deck, which is cured by the use of a cleaning tape. If the problem does not go away, then look at the tape. It should be flat, any ripple along the edge is a sign of wear or bad transport in the mechanism. In a professional machine, the cure is to use the built-in timebase corrector. This is a device that restores the sync pulse on the video signal and compensates for any tape faults. Some high-end domestic machines also have these, but there is a device you can add to any system, called a 'Bug-Blaster' at about £60, made by a company called ACT Electronics. This will improve the signal from the source VCR to the Genlock, by re-generating the sync signal. You hook it up as shown in the diagram on the right.



Unstable pictures are common when using a Genlock, but quite often a Bug-Blaster can remedy the problem.

Right: A simple backdrop created with the tile function looks even better when you drop some text over the top.



pressed or expanded form than others, so an overscanned display still may not fill the screen on certain monitors. Use these grids to test whether you need standard or severe overscan mode. Alter the screen position using the WorkBench Preferences if it is not in the centre of the display.

VideoTitler can create screens in the main Amiga resolutions excluding any of the HAM or the new Productivity or AGA modes. When you change any mode from the 'Display>Screen' menu, be warned that the current project is cleared. For most uses you can get away with using either Low-Res or Video-Res modes. Low-Res uses the least memory, but you must remember to set Interlace on before you send these screens to video.

SUPERIMPOSITION

Much of my postbag at the Amiga Video Producers Group concerns the art of getting titles superimposed over existing video footage. The majority of the problems arise not from the Amiga part of the effort, but from the quality and content of the video footage. Forward planning is the key. At the shooting stage, be aware of any titles you may have to overlay at a later stage. Here are some basic pointers:

- Always use high quality tape in your camcorder. Cheaper tapes do not record as strong a signal as the premium quality versions.
- Invest in a non-abrasive cleaning tape and use it before a recording session.
- Still shots work best for title sequences, so use a tripod or other support to get a steady picture.
- Shoot the sequence too long rather than too short, so that you can cut to the correct length as you edit and add the title.

IN DEFENCE OF COMPOSITE

The majority of you will be using a normal VHS, VHS-C or 8mm camcorder format. These all use composite video signals, which have a reputation for poor quality. I would like to defend the reputation of composite by saying that 75% of professional TV in the US still uses this method! The resolution of VHS is around 230 to 260 lines, with 8mm being slightly higher. Composite signals are capable of over 360 lines, which is far above the resolution of VHS. The two high band systems, Hi-8 and S-VHS, work by recording the picture brightness and colour levels separately, which gives higher resolution recording, typically with about 400 lines for S-VHS and 420 lines for Hi-8. However, most of the S-VHS and Hi-8 camcorders I have seen, have composite as well as the high band outputs. Therefore, for most uses, I would argue that a composite GenLock can work just as well when creating a VHS tape.

I use a Rendale 8802 composite GenLock on a S-VHS edit suite for the majority of my videos. Originally the same GenLock was used on a Sony U-Matic professional system, which was all composite as well. I have found that the trick is to put the titles on at the very last stage, which normally means on the finished tape. As a composite GenLock can cost only a quarter of a high band version, it can be a good way of making your video budget go further.

You do see some cheaper high band equipment like GenLocks and signal processors. Whilst it may be genuine high band, some devices convert the high band input to composite, process the signal, then convert it back to high band for output. Therefore, this type of equipment is not as good value as it may seem. You may as well buy a composite version and pay less money. The way to avoid buying equipment like this is to ask before you buy. If you cannot get an answer from the store, contact the manufacturer.

It takes a bit of work to plan your shots with regard to post-production titling. Shooting a good video is 40 per cent planning, 20 per cent shooting and 40 per cent editing. As part of your plan, take a spare tape with you, purely to shoot the scenes that you will use for the title sequences of your video. Take the shot that sums up the content of the video. For example, on your next holiday, climb to a high vantage point and shoot a wide angle view of the location. Frame the shot in such a way as to allow your titles to fit into one third of the screen area. Other suggestions are to shoot a view including a bridge or archway, and use it to frame the titles or captions on the finished production.

Try to place the title over a contrasting bit of the video picture. Choose an area of grass, sky, sea, snow or another area with no visual interest, and place the graphic over it. Draw up a grid that divides the screen area into three (vertically and horizontally) and use it as a guide to placing various graphic and picture elements. Draw your graphics in a contrasting colour to show up against the video background. If your choice is for a white or light coloured title, it will look better outlined in black and perhaps with a slight drop shadow.

VideoTitler is a good starting point for all the lettering you need. You can set the colours and special effects on the characters to fit your video. Try out effects like distorting the scaleable fonts to fit an area on your video picture. I use *VideoTitler* to create my basic words, which I then save to disk. Next I load the saved pictures in *DPaint*, and cut the words out as brushes, so I can move them around to get the correct placement.

TITLE WORK SEQUENCE

Try to play back the original tape using the machine that recorded it. For many of you, this will be the usual method, as your camcorder will be the source video in your home video edit suite. The same goes for any soundtracks you may be dubbing over the visuals. With analogue machines,



head alignments and frequency responses will always vary slightly from one recorder to another.

It is worth investing in dedicated cables to connect your source video to the GenLock and on to the record video. This will give a far better signal than a set of universal cables and adapters. Before making the final edit, go through a rehearsal of the sequence of titles and video.

Have your text prepared in *VideoTitler* in advance, save it as a file and pick up the words as a brush in *DPaint*. Having the text as a brush will enable you to accurately position the text within the video picture. Should the colours clash or cause interference, you can adjust the palette at this point before stamping the brush down in the correct place. Use the <F10> key in *DPaint* to turn off the menu bars, before you position the text, as the screen position can shift, especially when using overscan.

It is better to run the camcorder off a fully charged battery when making the final edit, because some mains adapters supplied with camcorders can cause problems by introducing interference from the mains electricity. CU

NEXT MONTH

Next month Jim will be tackling some of the problems experienced with more advanced video production.

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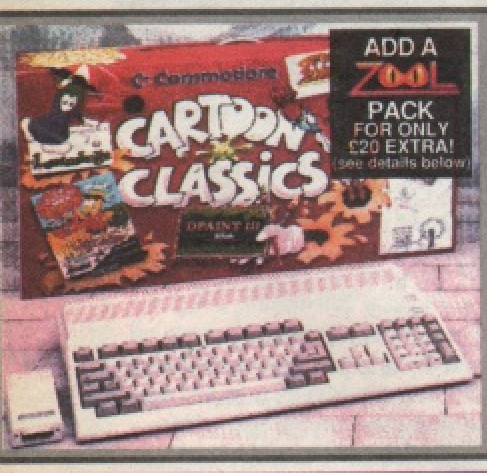
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GAMES PROGRAMMING MADE EASY

PART 5

Even with all those ghosts chasing after our PacMan, he's still untouchable. Until now, that is... Dave Smithson shows you how to add collision detection to our special CU AMIGA *PacMan* game.





Over the past few months, our *PacMan* game has been growing at a phenomenal rate – already we've got PacMan wandering around a maze pursued by three Pac-hungry ghosts. At the moment though, it still leaves a lot to be desired.

POWER PILL PUSHER

Adding a collision detection routine to our game isn't as complicated as it may sound. AMOS already provides us with all the commands we need to keep track of any collisions that might take place. These commands allow you to check whether a sprite or bob has collided with either another sprite, bob or even the background. Our game still needs to be quite intelligent though – after all, PacMan doesn't always come off worse if he does collide with a ghost. If, for example, he's eaten a power pill, then he'll be able to chomp his way through the ghosts instead. Under normal circumstances, however, PacMan will lose a life if he comes into contact with his ectoplasmic pursuers.

Before we can code a collision detection routine, we need to add in a routine that allows PacMan to pick up the four power pills scattered around the screen. We don't need to use AMOS's collision detection routines to handle this simply because their position is held within the MapData() array that we used to draw up the map and to handle the movement of both PacMan and the ghosts. All we need to do is to call a short routine that continuously checks to see whether PacMan is standing on a floor block with a power pill.

Check back to the issue in which we discussed the *PacMan* movement routine. As you may remember, that routine called a procedure called _CHECKFLOOR that was responsible for removing the dots and power pills scattered around the maze as PacMan moved over them. What you may not have realised is that this code also

The power pills that are scattered around the game screen are found simply by checking the contents of the MapData() array.

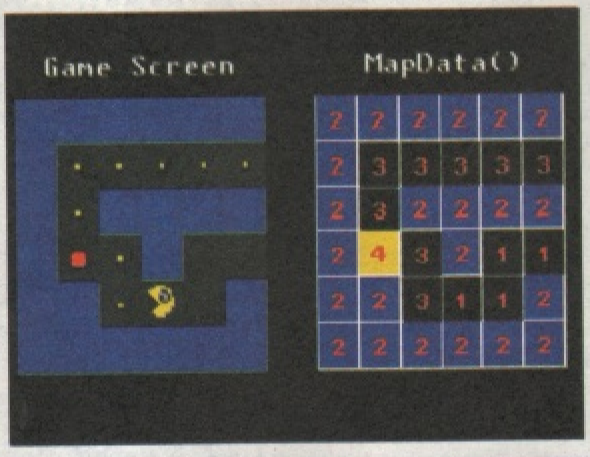


TABLE 1

```
Procedure _CHECKFLOOR
  If MAPDATA(PACY,PACX)=3
    Paste Icon(PACX*16)+8,(PACY*16)+8,1
    MAPDATA(PACY,PACX)=1
    Inc PILLS
    SCORE=SCORE+10
    Sam Play 1
  End If
  If MAPDATA(PACY,PACX)=4
    Paste Icon(PACX*16)+8,(PACY*16)+8,1
    MAPDATA(PACY,PACX)=1
    SCORE=SCORE+100
    PPILL=1 : Timer=0
    Sam Play 1
    Sam Play 2
  End If
End Proc
```

LEVEL HEADED

So far our game has only one rather basic level, but it is possible to make the game progressively harder simply by changing the values of certain variables. You could, for example, modify the ghost movement routine that we published last month so that the speed of the ghosts is controlled by a single variable. As the player progresses through the game, the ghosts could be accelerated by increasing the value of this single variable. There's only so far you can take this though – if you have the ghosts running around the maze 10 times faster than PacMan, he's hardly going to last long regardless of how skilled the player is.

Another possibility is to increase the number of ghosts roaming around the maze. Once again, this would be fairly simple – as the ghost routine that we published last month simply processes a set of three data structures using the loop, all you need to do is to turn on an extra ghost bob and then increase the number of times that the ghost movement routine loops. As it is, the routine loops three times – by increasing the number of loops, the extra bob would automatically be handled with virtually no changes having to be made to the code. This is another good reason why you should take advantage of data structures whenever you can.

You could even vary the map data itself by storing several maps in memory at once. Because all the various routines that move PacMan and the ghosts around the maze work on this map data, it would automatically work with any new map data that you generate. Once again, this too just goes to demonstrate how important it is to plan your code before you write it – if we had written a routine that was 'hard coded' to work with just one screen layout, it would have been virtually impossible to add further levels!



Left: Our game can be made progressively harder by increasing the speed of ghosts, the number of ghosts wondering around the maze and even the maze itself!

included everything we need to handle the power pills! See Table 1.

The first half of the _CHECKFLOOR routine simply checks whether the floor tile that PacMan has walked onto contains a value of 3 (denoting a standard 'dot'). This obviously has no effect on PacMan. The second half, however, is far more interesting. If the floor tile that PacMan walks onto contains a value of 4 (denoting a power pill), then a flag variable called 'PPILL' is set to 1 and the AMOS timer is reset to zero. As soon as this is detected, PacMan becomes invincible.

COLLISION DECISION

This invincibility must be taken into account once we move onto the collision detection routine. This little procedure is called within the main game loop (the section of code that calls the PacMan and Ghost movement procedures). See the listing in Table 2.

The _CHECKCOLLIDE routine does a lot more than just monitor any collisions between PacMan and the ghosts. It also keeps track of the power pills that PacMan can pick up (more on this later though). So how does this routine work? Well, it's actually very simple indeed. It starts by calling the AMOS 'Bob Col(0)' command that essentially checks to see whether blitter object 0 (PacMan) has collided with any of the other bobs on the screen. As the only other bobs are all ghosts, we can take it for granted that if a value of -1 is returned, then PacMan has collided with a ghost.

Unfortunately though, the Bob Col() command doesn't tell us exactly which Bob PacMan has collided with. In order to do this, we need to check the contents of the array Col(). This hasn't been defined within our program because it is what is known as a 'reversed variable' – that is, it's a variable that AMOS uses itself. In order to check this array, we run through a loop that checks the three ghosts to see if they too have been in collision with PacMan. This is done by reading the value of the Col() array and if a value of -1 is returned, then we've got our ghost. The ghost's number is then stored into a variable called GHOSTCOLLIDE.

The routine then moves on to the section of code that decides whether PacMan or the ghost that he collided with came out worse. The first thing to do then is to check the status of the PPILL flag – if a value of 1 is returned, then we know that PacMan has recently swallowed a power pill.

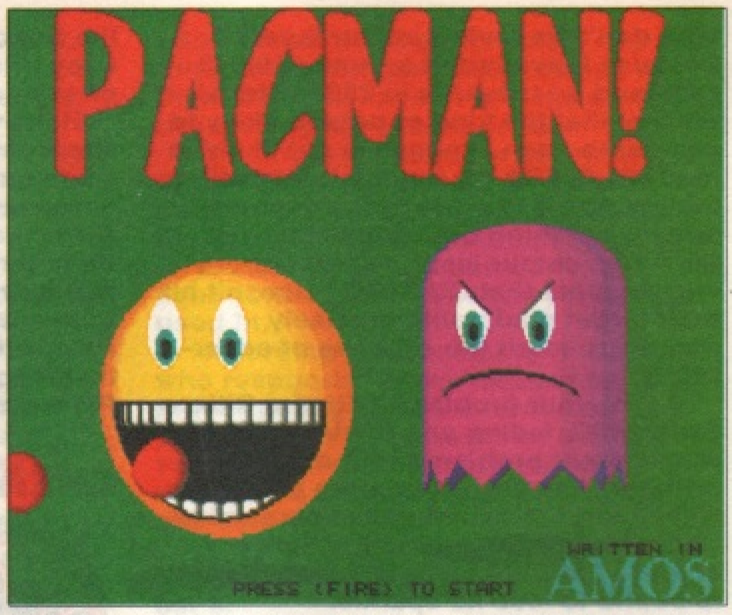
What we don't know, however, is whether the pill still has an effect on him. We therefore check the timer to see whether it is greater than 500 (don't forget that 50 = 1 second, so 500 = 10 seconds). If it is, PacMan is no longer invincible so the PPILL variable is set to 0 and PacMan then bites the dust. If the timer is less than 500 though, the ghost comes out worse and a short procedure that kills off the ghost is called and the player's score is increased by 100.

If the PPILL variable is not set to 1, then we know for a fact that PacMan will lose if a collision took place. The value of the GHOSTCOLLIDE variable is checked and if it is greater than 0, PacMan loses a life.

TABLE 2

```
Procedure _CHECKCOLLIDE
   GHOSTCOLLIDE=0
   STATUS=Bob Col(0)
   If STATUS=-1
      For A=1 To 3
         GHOSTSTATUS=Col(A)
         If GHOSTSTATUS=-1
            GHOSTCOLLIDE=A
         End If
      Next A
   End If
   Next C

   Rem *** Monitor Power Pills
   If PPILL=1
      If Timer>500
         PPILL=0
         If GHOSTCOLLIDE>0
            LOSELIFE
         End If
      Else
         If GHOSTCOLLIDE>0
            _KILLGHOST[GHOSTCOLLIDE]
            SCORE=SCORE+100
         End If
      End If
   Else
      If GHOSTCOLLIDE>0
         LOSELIFE
      End If
   End If
End Proc
```



Adding a title page to your AMOS game can vastly improve its presentation. Just about any standard IFF paint package can be used.

SKELETON CREW

Our game is now complete in a skeleton form, but there are a few extra routines that still need to be added to give it that professional look – a high score table, a title page and even a title tune. The high score routine is documented below, but adding the title page and music is simply a matter of booting up *DPaint* and your favourite *Sound Tracker* (I personally use *ProTracker*, but just about any *Tracker* clone will do the job). Once all that's done, your game is complete. CU

NEXT MONTH

Next month we'll be continuing our look at the ancient art of AMOS games programming with a new type of game altogether – the good old shoot 'em up. If you've ever wanted to blast baddies from the skies, then stay tuned. See you next month!

HIGH SCORE TABLES

One of the most important routines that you'll find in virtually every game is the good old high score table that keeps track of the best five or so scores. Surprisingly though, actually writing a high score table routine isn't quite as easy as it may seem – if you don't believe me, why not have a go? If you do fail miserably, then here's all the code you need arranged as a very handy procedure that can be plopped straight into just about any game. Although it handles a high score very well indeed, its presentation is very basic indeed, so it's up to you to enhance it so that it looks pleasing.

The code itself is fairly simple. All it does is to create two arrays – one for the high scores and another for the player's names. The task of maintaining these arrays is handled by a short procedure called HIGHSCORE that takes a score as it's input and then checks to see whether this score is higher than the last score in the table. If it is, it then searches through the table to find the position of the score within the table. All the scores directly below this score are then shifted down by one position (therefore causing the bottom score to drop off the table) and the new score is inserted into the gap that is remaining.

I've also included a short section of code at the beginning that demonstrates this routine. This isn't actually needed, so chop it out once you decide to include it in your game. All that is really needed are the variable definitions at the beginning (these should be placed at the start of your game), the loop that fills the array with the default values and the highscore procedure itself.

```
Dim HISCORES(10),HISNAME$(10)
Global HISCORES(),HISNAME$()
For C = 0 to 9
   Read HISCORE(C),HISNAME$(C)
Next C
Data 10000,"Dave Smithson"
Data 9000,"Dan Slingsby"
Data 8000,"Nick Veitch"
Data 7000,"Jonathan Sloan"
Data 6000,"Heather Turley"
Data 5000,"Tony Horgan"
Data 4000,"Mat Broomfield"
Data 3000,"John Kennedy"
Data 2000,"Kenny Grant"
Data 1000,"CU Amiga"
FMAT$=" ~~~~~~~~~~~~~~~~~~~~~ "
Do
   Input "Enter Score: ";SCORE
   _HISCORE[SCORE]
   For C = 0 To 9
      Print Using FMAT$;HISNAME$(C),HISCORES(C)
   Next C
Loop
Rem *** Basic HiScore Table
Procedure _HISCORE[SCORE]
   If SCORE>HISCORES(9)
      Print "Congratulations!"
      Input "Enter name - ";NME$
      For C=9 To 0 Step -1
         If SCORE>HISCORES(C)
            POS=C
         End If
      Next C
      For C=8 To POS Step -1
         HISCORES(C+1)=HISCORES(C)
         HISNAME$(C+1)=HISNAME$(C)
      Next C
      HISCORES(POS)=SCORE
      HISNAME$(POS)=NME$
   End If
End Proc
```



Once more unto the breach... Mat Broomfield attacks that ever growing mailbag of reader's queries. If you've got a problem you'll find the answer here.

COLOUR PRINTER

I consider myself to be a professional/semi-professional DTP/WP user. I recently purchased the Citizen Swift 240C as I'd heard it was an excellent colour printer. Having printed out a couple of full colour pages, I felt rather let down by the results. I wasn't expecting bubble-jet or laser quality but I'm far from happy with the output. I recently used *Wordworth 2* to print 10 colour pages, and although the first page was quite good, by the last one the colours were both faded and muddy and there was a great deal of colour contamination, particularly with the yellows.

I know that you warned about this problem, and you may wonder why I bought a dot matrix printer in the first place. The reason (apart from price) was that I have seen no colour bubble jets (except the HP Deskjet 550C) or laser printers advertised in your magazine. I planned to buy the 550C, but although my contamination problems would stop, a resolution of 300x300 and bubble jet technology isn't quite what I'm looking for.

Are Hewlett Packard planning to bring out a 600C with a resolution of 360x360 or possibly higher? Is it possible to buy a colour laser for the Amiga? Why haven't you covered them in CU AMIGA as I'm sure that many people treat the Amiga as a top DTP computer, and consequently require this level of performance.

I would very much like to see Ricoh producing a colour laser printer for the Amiga, especially considering the fact that they make perhaps the finest black and white laser. Is this a possibility?

I have heard about the Canon BJC800. How do you rate this printer? Are there any colour laser printers available with an Amiga driver disk? Are there any particular ones that you can recommend?

Nathan White, Walsall, West Midlands

Why don't we review colour lasers? Because they start at around £10,000 each and go upwards in £5000 steps! We feel that the kind of person likely to commit to such expense is not likely to read CU AMIGA for buying information; they're going to go to the showroom and try the thing out for themselves. Similarly, colour laser manufacturers may suspect that CU AMIGA doesn't hit their target readership precisely enough to merit the expense of advertising.

As for your problems with the Citizen Swift 240C, fading and contamination are inherent problems with dot matrix printers. Any decent printing program will attempt to minimise the contamination effect by outputting the lighter colours first, but eventually the ribbon is bound to lose its sparkle.

Your point about bubble jet resolution and technology doesn't hold water either I'm afraid. The Hewlett Packard Deskjet 550C is a lovely little printer and at 300x300 DPI it has the same resolution as most laser printers. I would further state that bubble jet technology is close to that found in mono laser printers because the manufacturers are striving for high-quality resolution and fast output for a low operating cost in both cases. The major difference is that a laser printer is seen as a high throughput workhorse and needs a very durable engine, whereas colour bubble jets are not designed to take such constant punishment.

I think it's unlikely that HP will release a 600C with the specifications you mention, when their existing machines are more than adequate.

When I first saw Canon's BJC800, I liked it very much as it produced very solid areas of colour. Since its release however, HP brought out the 550C which in my opinion is every bit as good for £1500 less!

I don't know if Ricoh plan to release a colour laser, but it seems likely that most international laser engine manufacturers will want to explore this route.

There's one myth that I must dispel: except in the case of computers that have obscure interfaces such as the Apple Mac, ZX Spectrum or CBM 64, printers are not made for specific machines. Therefore a laser printer that works on the PC will usually work on the Amiga assuming you can locate a compatible driver.

The best colour printer that I've ever used on the Amiga was the Hewlett Packard XL300, a thermal fixing bubble jet that costs £1 a page to print!

A1200 DRIVER

I own an A1200 and have been printing from *Deluxe Paint 4* with great success.

I now want to alter the printer preference editor, but do not have have any printer drivers in the scroll gadget. The manual doesn't help at all.

Rod Sumpter, Birmingham

The manual does help. Read chapter 9 of the Workbench manual. It tells you at the bottom of the very first page how to copy printer drivers to the correct place on your disk.

However, the fact that you've been successfully printing from *D-Paint* leads me to believe that your preferences are already correctly set (on your *D-Paint* disk at least). If you load *D-Paint* through Workbench, I suggest you leave well enough alone until you understand chapter 9. If you load *D-Paint* without first loading Workbench, then copy the preferences on the *D-Paint* disk to your Workbench disk.

CHEAP DRIVE

I own an A500+ with 2Mb of RAM and a second drive. Currently I'm thinking about buying a hard drive but my funds are limited. A friend informed me that it is possible to connect an IDE to my expansion port. Please could you tell me if this is true, and if so what I would need and how much it would cost?

Neal Wilson, Haxby, York

You can add an IDE drive to your Amiga, but it's not really a cheap alternative. There is an interface called ADD-IDE (available from Silica Systems on 081 309 1111) which allows you to connect the drive.The trouble is IDE drives are slower and more restricting to use so given that you're going to add a drive I would personally opt for a SCSI device which gives you far more flexibility in the future. There are a number of SCSI drives (including my favourite – the GVP HD8+) which cost £250 or less. Although I would only buy a second-hand drive as a last resort, you may be able to find one for £150 or less. Why would I only buy a second-hand drive as a last resort? Because there are numerous hard-to-detect things that can go wrong with them, and you may not spot potential problems when you buy. Furthermore, the surface of the drive is not indestructible – it eventually wears out, and you can never be sure how much use a second-hand drive has had.

BIZARRE KEYMAP

I bought an Amiga 1200 in December of last year and ever since then I have been unable to set up the keyboard correctly. I've followed the instructions in the manual, visited dealers for advice (three of whom found the same problems with their demonstration model). I even tried ringing Commodore's technical help line. They wouldn't help 'cause I wasn't a dealer and the boss is never available for complaints. No matter what I do I end up with an American keyboard. The machine was bought from a reputable dealer and further checks confirmed that the machine is a genuine UK version. I've enclosed a separate sheet outlining the steps I've taken.

Can you answer the following questions:

1. Have others experienced the same problems?

2. Have I been supplied with the wrong master disks?
3. Where do I go from here? Names and addresses please.
4. Why did I buy an Amiga when I've experienced problems with three other Commodore computers (C64, C64+ and A500)?

I really hope that you can help because I'm on my own up here. There really seems to be a dearth of A1200 users in Yorkshire. All the other Amiga mags that I've written to (nicely I might add) have chosen not to help or print my letter.
David Butler, Wakefield, W. Yorks

1. Not that I've heard.
2. I doubt it.
3. Read on...
4. Because it's the best-value cool graphics hot-gamin' mega-musical MIDI maestro DTPowerful son of a gun you ever saw!!!

For once, I can sympathise with our rival magazines who chose not to answer your query because by what you've said in your attached sheet, there's absolutely no reason why the GB keymap doesn't work. Steps 11, 10(!) and 12 were unnecessary extras, but you've followed the correct procedure and a selection of keymaps should be available in the Input editor list.

I don't want to state the obvious, but I assume that you are aware that when you select the 'GB' keymap, in the Input Editor this appears as 'British'?

Again, not wishing to insult your intelligence, are you absolutely certain that you're copying the keymap to the correct drawer. I say this because whilst I was checking your procedure, I noticed that in the Storage window the Keymaps directory is at the bottom, with printers above it, but in the Workbench:Devs directory these positions are reversed. Consequently, I copied the keymap to the wrong window the first time I tried.

If neither of these work, then I'm at as much of a loss as you are. I suggest you take your computer back to the shop you bought it from (well the disks at least) and insist that they show you how to make the relevant changes or you'll demand an exchange.

As you've already discovered, Commodore's so-called technical help lines are an utter waste of time, however Silica Systems run free technical help on 081 309 1111. By the way, if our letters are anything to go by, there are loads of 1200 owners in your part of the world and just about every other part of Britain!

UPPITY AMSTRAD

I have inherited an Amstrad DMP 2000 printer. It works fine on my A500+ except for the pound (£) and hash (#) signs which both print as P*. Could you please tell me the correct pin assignments as I believe that this is where the fault lies.
S. A. Sullivan, Estover, Plymouth

I don't think that your problem has anything to do with pin assignments. I think that you haven't told the printer to use an English character set.

The printer is capable of printing characters from more than half a dozen different alphabets. By default, it's set up to print American characters, but before you can use it you need to tell it which country it will be used in.

According to Paul Moore of Glasgow, who responded to my request for printer configuration information last year, there are two banks of DIP switches on or in the printer and they need to be set as follows for English characters:

BANK 1 – All switches off except number 3.

BANK 2 – Numbers 1, 5, 6, 7 and 10 on, the rest off.

ARABIC AMIGA

I am a student learning Arabic (it looked good in the prospectus, honest!) and I'm in desperate need of the following:

1. An Arabic/English word processor;
2. An Arabic/English database; or
3. A database capable of handling user-defined characters/fonts.

I did think that for number three I could design a font of half Arabic, half English characters to use in the database, but I haven't a clue how to do it. Can you help? Can any of your readers help?
John Rudolf, Leeds

Unfortunately, you're right out of luck, John. To the best of my knowledge, not one of the things that you've asked for exist on the Amiga.

If you own a DTP package, there are modern and ancient Hebrew fonts available if they're any use? But I suspect not. Alternatively, you could design your own fonts with *Typesmith* or some other similar font designer.

I suspect that the Word Perfect Corporation produce an Arabic word processor, but unfortunately they only got as far as 4.12 of the English version on the Amiga.

You'll either need a PC or a PC emulator in order to access their foreign language WPs. Contact the Word Perfect Corporation on 0932 850500.

As for Arabic databases, I doubt that you'll find such a program on any computer outside the Middle East, and even then, they're only likely to be available on PCs.

If you can find out which font an ordinary database uses, you could substitute their version for your own one provided you give it the same name. Then you'll need an Amiga bitmap font editor to create the appropriate characters. Two such programs are *Font Grabber* from Genisoft and *Calligrapher* from First Choice, call them on 0532 319444.

DTP POSERS

I'm going to get into desk top publishing but being rather new to the computer scene, I must admit that I've tried in vain to understand what I'll need to buy to get started. Hopefully you can clarify matters...

1. Is there an inexpensive DTP program that lets me use an unlimited number of fonts?
2. I've noticed that various PD outlets advertise clip art. Is this a worthwhile source of material for DTP use? How is it produced?
3. I was thinking of buying a scanner and a digitiser, but the bank manager will only allow me to get one at a time. Is it worth buying both or will one provide me with sufficient material?
4. I understand that DTP software can require more than my standard 1Mb Amiga. Is a hard drive the answer or is there an alternative choice that would work just as well if I had two disk drives?

If not, can you recommend a hard drive as I don't understand which one to buy. They go on about 52Mb with 8Mb expansion. What does this mean and what size of hard drive would be most suitable?
5. Which should I buy first, the DTP program or the expansion required to run it? In other words can I work with the DTP program while I save up for the upgrades to my Amiga?
Michael Ramsay, Forfar, Angus

1. It depends what you mean by 'an unlimited number of fonts'. If you mean an unlimited number of different typefaces in a single document, then I believe they all do. The only restriction is the amount of memory available to you. If you mean an unlimited number of different font formats (such as Compugraphic, Type 1, Postscript, etc.) then no single package supports them all, but Softlogik's *Pagestream 2.2* comes closest.

Incidentally, it's extremely bad, typographically speaking, to change fonts too many times on a single page. I'd be surprised if you needed more than three or four fonts and bold/italic versions of them.

2. Clip art is like computer games. Some are great, and others are real dogs! On the whole, it's quite worthwhile, and it's cheap enough to take a chance on. It can be produced in one of three ways – it can be hand drawn, it can be scanned or it can be digitised. If the clip art is structured as opposed to bit-mapped, it produces better printouts, especially when re-sized, but the images tend to be simpler.

3. Scanners are for digitising images from paper. Digitisers are for digitising images taken from a video signal. Scanners are ideal if you want to digitise a photograph or graphic or piece of line art. Scanners capable of producing black and white or grey images start under £100, and my favourite is the Alphascan Plus which can create 256 levels of grey.

Colour scanners tend to be very expensive to buy (£200+) and worth- »

» while ones will cost upwards of £500. I'm rather dubious as to their value in all but 24-bit colour modes. To scan or digitise in 24-bit colour will require very large amounts of memory for all but the smallest of images.

Digitisers can be connected to video cameras and video players. They are ideal for digitising real world scenes or television images. Whilst they can be quite good at digitising photographs (with a suitable video camera), a scanner would produce a sharper image in such circumstances. A digitiser is certainly the more versatile (and entertaining) of the two pieces of hardware. For £99.95 you can buy Rombo's superb entry level Vidi-12 digitiser which is compatible with any Amiga and even supports the new AGA screen modes.

4. Even if you buy *Pagesetter 2* which works with your set-up, you'll soon run out of memory with only 1Mb, especially when you start using multiple fonts and graphics. If you can possibly afford a hard drive, it will make your life much easier, but at the very least you should purchase a couple of megabytes of extra memory. Apart from animation and 24-bit graphics work, DTP is probably one of the most memory intensive activities that you can do on your Amiga.

Ideally you should buy at least a 52Mb hard drive with 4Mb of extra RAM. This means that you will have 52Mb of disk storage space – equivalent to 59 floppy disks – and a total of 5Mb of memory.

As usual, my recommendation would be the GVP HD8+ hard drive, which you can buy for about £249.50.

It depends which DTP software you buy. If you go for *Pro Page*, you can't run it without a hard drive. At the moment, the *Pagestream 2.2* shrink wrap pack represents incredible value for money at about £62 (a discount of £237 off its normal retail).

Personally, I like to get the most expensive kit out of the way first, and that will certainly be the expansions.

ACTION REPLAYS



In recent adverts, Datel Electronics say that their Action Replay cartridge can, among other things, freeze any game and allow you to save that screen to be used in a paint package. Is this correct and, if so, does the copy retain the original quality?
Michael Ramsay, Forfar, Angus

The advert is essentially correct. Action Replay plugs into the expansion port (where a hard drive would go if you have one). When you press the Freeze button, the cartridge interrupts the CPU and takes control of the computer. Theoretically, at this point you can save whatever screen was currently displayed. In practice this doesn't work with a lot of programs, particularly those that use sprites or bobs (such as many arcade games), or those that directly hit the copper chip for colour cycling effects, etc. AMOS screens also cause problems for some reason. The screens that can be grabbed are exact replicas of the originals, and thus retain all of their original quality.

EMULATORS



I own an Amiga 1000 and I would like to ask a few questions about PC emulators.
1. What actually is a PC emulator?
2. How much would it cost?
3. What will I need to use it?
4. Where can I get one from?
5. Is there an Atari emulator as well?
Christian Holland, Spilby, Lincs

A PC emulator is a device (usually a combination of software and hardware) which plugs into an Amiga and temporarily turns it into a PC. Most of them emulate slow 286 PCs although some emulate 386s. Unfortunately, due to the graphics capabilities of the non-AGA Amigas, most emulators are not capable of reproducing all of the PC's colour screen modes.

Try as I might, I couldn't find anyone who sells PC emulators for the A1000, which to be honest is more or less obsolete now anyway. Sorry, but isn't it about time you considered one of the newer Amigas? You can buy an A1200 for £400 and a second-hand A500+ for little more than £100!

VIDEO VORACITY



Being a dedicated user of an expanded A500+ for post production video titling I have one major question about my possible future upgrades.

Presently I'm using an Electronic Design genlock to overlay titles onto video signals. With this set up I have several problems when using hi-res since this is flickery when output to a TV. I have to use a TV since my clients will watch the finished product on a standard TV (from VHS tape).

I've seen several reviews of the A4000 with its AGA chip set which can display resolutions up to 1280x512 in 256 colours out of a palette of 16.8 million. I've also read a lot about 24-bit graphic cards which, when connected to the desktop Amigas (A1500 upwards), can produce stunning effects.

The obvious question is, is a normal TV set capable of displaying all these colours and resolutions (24-bit and AGA) or are they useless?

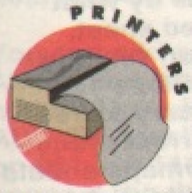
Some additional questions: Does an *Opalvision* card exist for the A500+? Which is the best 24-bit card?
Dominic Cachia, Sliema, Malta

Because of the encoding of the PAL broadcast system, the images displayed are actually pseudo 18-bit. The actual screen resolution is only theoretical, because there is a great deal of channel crossover in an analogue system. Basically, your Amiga can at present produce a greater resolution picture (in terms of pixels) and the AGA chipset will produce a comparable colour resolution. Some of the new screen modes will not be available if you are directly connected to a TV. Try putting your screen into an interlace mode, which may (perversely) cure your flicker problems on video.

There isn't an *Opalvision* card for the A500+ yet, but an adaptor has been promised to coincide with the release of *Opalvision 2*, which will work with both the A500 and A500+. So far as I know, the only current A500 compatible 24-bit card is the AV24 from Checkmate Digital.

There are some truly awesome 24-bit cards available for NTSC users, but on PAL machines the best broadcast quality solution is the Harlequin. If you just want a 24-bit display card the MacroSystem Retina is hard to beat. Both of these cards are available from Amiga Centre Scotland, on 089 687 583.

PRO PRINT SERVICES



I use my A1200 for DTP work, and until now my humble 300 DPI laser printer has been more than adequate. However, I'm now hoping to move into full colour work and I don't feel that even Hewlett Packard's high end colour bubble jets will produce sufficiently high quality results.

Can you suggest a way of outputting my *Professional Page* documents? Also, do you know of a cheaper alternative to the £600+ flat bed scanners for capturing 24-bit images?
Steven Booth, Hawksley

The logical answer to your first question is to use the services of a commercial printing bureau. Unless you want to mess about converting your files onto PC disks, you'll need to use a bureau that can handle Amiga files. BJ Print Services are just such a company, and they offer a range of output services ranging from 600 DPI mono laser prints to 24-bit colour at 2400 DPI.

For maximum economy, you'll need to supply your document in Postscript format including any fonts you've used. You'll find that they charge about £25 an hour for labour.

Co-incidentally, they also offer a full 24-bit scanning service for digitising your photographs.

Phone BJ on 0803 666003 or write to them at 19 Winsu Avenue, Paignton, Devon, TQ3 1QG.

1200 EXPANSIONS



I currently own an A1200 and I'm looking to expand. My problem is whether to stay with my A1200 and buy a hard drive, maths co-pro and memory, or sell my 1200, buy an A4000 '030 and take advantage of the faster processor. I use my computer for a variety of things other than games. Can you help me decide by answering the following questions:

1. Is the A1200 limited to 10Mb of memory or can this be increased by using bigger SIMM modules.
2. Are we likely to see Zorro slots and the like for the 1200?
3. I've heard that the processor on the 4000/'030 has an MMU but it has been disabled. Is this true?
4. Does a maths co-pro for the 4000 come on a separate board or is it just a chip that plugs into the CPU board?
5. I've noticed in your game reviews that when reviewing games, you also state which machines they are compatible with. Does the A4000 entry refer to the '030 or '040 version of the machine?
6. I have a few games that work on my A1200. If I upgrade to a 4000 will they still work, or will it only run 1200 specific games?
Name and address supplied

1. No, the A1200 is not limited to 10Mb of memory. Golden Image have just released a 9Mb expansion board (bringing the total to 11Mb). Microbotic's accelerator board lets you add up to 128Mb in a single (very expensive) SIMM module.

Incidentally, these SIMMS cannot be plugged straight into the A1200 – you'll need some kind of board to plug them into.

2. No, we won't see Zorro slots, the 1200 doesn't have the architecture to support them.
3. The 4000 includes the 68EC030 CPU. Apparently these chips are actually full 68030 chips whose MMUs failed at the final testing stage. Therefore, although in the physical sense the 4000's CPU does include an MMU, even if it weren't disabled, it wouldn't work anyway.
4. You can plug a maths co-pro directly into the 4000.
5. The '040 version.
6. Provided you only upgrade to a 4000 '030, your games should work. However, there are a number of programs that work on an '020/'030 processor which won't run on an '040.

THE WRONG CHOICE

I have recently bought an A1200 with an 80Mb hard disk drive. At first I thought it was the best buy I could ever get, but now I'm having second thoughts for a couple of reasons.

The disk drive on the A1200 only has a capacity of 880k which means less storage space on a disk. It seems that the A1200 is the only computer which has this small capacity as all others have high density drives. Can I replace the A1200 drive with a high density one?

Extra memory upgrades also seem to cost a bomb. For example, Power Computing's PC1204 4Mb expansion with clock and no FPU costs £185.95. Some people may be able to afford this, but my pocket doesn't stretch that far. Isn't there a cheaper way to expand the memory on a 1200? Even a 2Mb PCMCIA card costs a whopping £149.

After examining your comparison in the May edition, I feel that I have made a bad choice and would have been better off with a 386 PC with which I would got a monitor as standard for the same amount as I paid for my 1200.

Tell me something to change my mind, and don't refer me to your comparison because it's that which has made me doubt the wisdom of my choice in the first place.
Farrakh Chowdhry, Pentwyn, Cardiff

The A1200 drive is, in fact, capable of formatting disks to a capacity of 901k if you use the Fast Filing System (FFS) format option. Furthermore, not all computers have high density drives, in fact some still use drives that only have a capacity of 360k.

In any case, although high density drives mean that you can store more on a single disk, you will find that these disks are considerably more expensive to buy.

I don't think that you can replace your existing internal drive with a high density one (it's certainly not possible to do so without invalidating your warranty), but Power Computing (tel: 0234 843388) produce a high density external drive which costs £129.95.

It's worth remembering, however, that high density drives can only be used to store your own data on as there are no Amiga programs available on high density disk. Power's drive is also capable of reading ordinary low density data as well, and will allow access to PC format high density disks on WB3 machines.

I agree, memory expansions do seem rather pricey, but the Power card that you're referring to was not a good example. For starters the card contains extra circuitry to run an optional FPU (maths co-pro) chip which would speed your A1200 up. It also comes with a clock as standard, so the price seems quite reasonable to me.

The cheapest way for you to add memory to your A1200 is in the form of a dedicated RAM-only card. This means that you don't pay for extra stuff that you don't actually need.

Of course, it's worth remembering that memory expansions on the A1200 are fast 32-bit RAM as opposed to the much cheaper 16-bit kind found in the older Amigas. Needless to say, this improved technology costs more!

As a matter of interest you can buy a 1Mb 32-bit expansion for £65.99 or a 2Mb 16-bit PCMCIA card for £114.99 from Phoenix Computer World. Phone them on 0532 350091.

VIDI MAD

I am considering buying the VIDI Amiga digitiser which was advertised in the June issue of CU AMIGA, but before I commit myself can you please answer a few questions?

Will it still work on a video recorder which has a terrible pause facility? I know that it is capable of capturing moving pictures but the quality must surely be better if they're paused. How did you do the *Star Trek* pics, moving or paused? Does the AGA version have better software, because I'm only using an old A500?

I'm going to buy a 2Mb A500+ from Silica; will it still work with that set-up? Can I save pics in HAM mode to be edited in *Spectracolour Junior*? What about 64 colour for editing in *D-Paint*?

If I want to make a slideshow for PD release will I find it easy to do? What's the highest resolution that ViewILBM works with? Is there anything better?

Are all cables supplied with Vidi 12? Does the manual show you how to connect digitiser to video and is it easy to get to grips with? Does it plug into the mains because I don't have spare sockets?
Rizwan, Bradville, Milton Keynes

Vidi 12 can only capture moving pictures in grey scale, not full colour. Full colour requires an image which is perfectly still for at least a second, therefore your video recorder will be no good. You could still digitise from a camera though.

I took one Star Trek picture from a television, and the other (the Ferengi trader) from a video camera pointed at a page in a magazine.

Vidi 12 comes with a single software program for both AGA and non-AGA machines. It's up to the user to configure it as they require – therefore the software is equally easy to use regardless of the Amiga that you use it with.

The digitiser captures all images as 12-bit colour data, and then mixes this according to your display preferences. HAM mode is by far the best, but 256 and 64 colour are the next best modes.

The unit draws its power from the disk drive slot on your Amiga, and therefore won't require a mains socket. Naturally it comes with all cables.

The manual shows and tells you everything that you could possibly need, in easy-to-follow steps. For further information phone Rombo on 0506 414631.

SAMPLE STORY

I am writing to enquire about the sampler featured in your DIY section. A friend who is a qualified electrician has built the sampler to spec. and we have noted the correction in the June issue. The problem is that there's no sampling at all when connected to my A1200, so could I please ask you to check your specs and parts.
Mr. H. Ambler

There's nothing wrong with the sampler circuit, and the parallel interface on the A1200 is more or less exactly the same as on every other Amiga. Try it with any external drives or other peripherals connected, and check out the software you are using – it may not be fully A1200 compatible. Check the 'Light' program on last month's disk.

NEXT MONTH

We've run out of space now, but Mat will be returning next month with answers to all your tricky queries. Remember no problem is too big or too small for our resident in-house expert. Send your questions to Mat Broomfield, Q&A, CU AMIGA, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.

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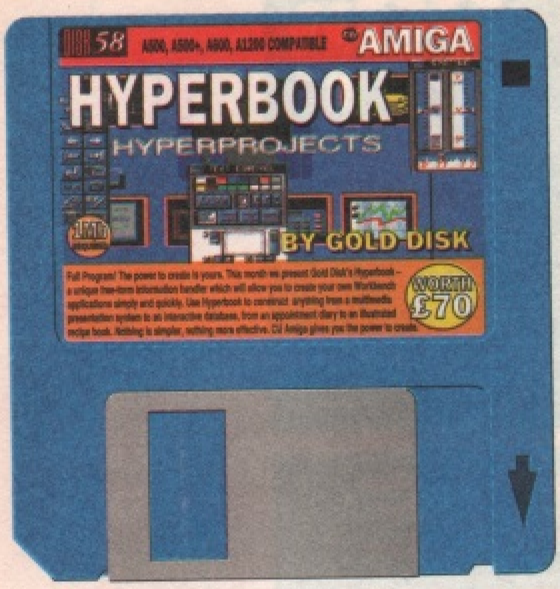
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PART 1 **If you've been tinkering with *HyperBook*, from June's coverdisk, and want to know what else it's capable of, here's the place to find out. In the first of a new series, Jason Holborn puts the program through its paces.**

GETTING STARTED WITH HYPERBOOK

If you picked up a copy of the June issue of CU AMIGA, then you'll already be the proud owner of *HyperBook*, Gold Disk's easy-to-use multimedia authoring system for the masses. As you have probably already realised just by looking through the demo 'books' (this is what *HyperBook* calls its 'stacks'), *HyperBook* provides a quick and easy method of knocking up just about anything from a simple slideshow to a full-blown multimedia-based educational training system.

GETTING STARTED

Over the next few months or so, we'll be putting *HyperBook* through its paces by showing you how it can be used to create some really quite useful applications. Don't let this concern you, however – there's no coding involved (well, at least there's only very little) so even your Grandma will be able to handle our *HyperBook* tutorials.

This month we're kicking off with a little utility that all hard drive owners will undoubtedly find very useful indeed – a hard disk menu.

Our *HyperBook* menu system will allow you to set up a menu containing a list of all your favourite programs that, once installed, can be run simply by clicking on a gadget. Just think – there'll be no more need to hunt through endless directories trying to find that ray tracing program that you haven't used for months!

FUNCTIONS

In these tutorial pages over the next few months we'll also be including a couple of useful functions which will allow you to carry out all manner of house-keeping chores such as formatting a disk, copying a disk from DF0: to DF1:, etc.

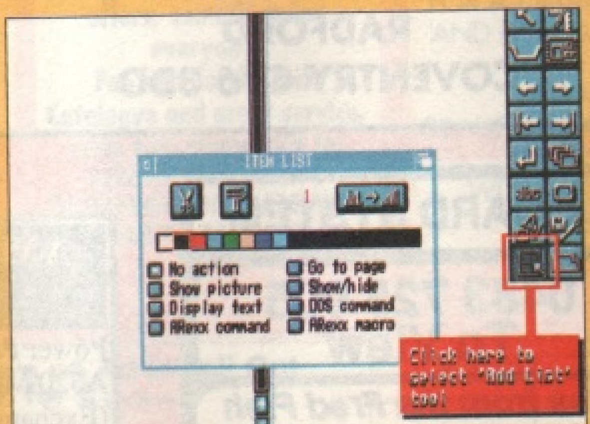
Does all this have you raring to go? Well, in that case, why don't we boot up *HyperBook* and get started?



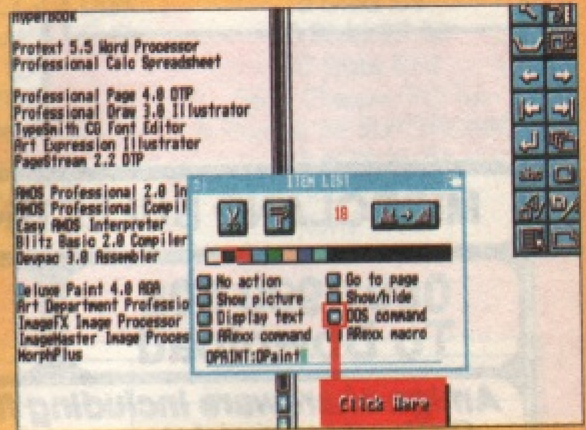
2 Once the basic shape of the list has been defined, we can start typing in the names of the programs that we can launch from the menu. At this point, exact file and pathnames aren't important – the text that is displayed within the list is nothing more than labels, so you can type anything you want – 'DPaint AGA 4.5 Paint Program', for example, for *DPaint*. If you want to split the entries up so that different types of program are grouped together, *HyperBook* does allow you to do this simply by pressing the <RETURN> key to insert a blank line. Don't worry about these blanks – unless you assign an action to them, they will do absolutely nothing if the user clicks on them.

3 Now that we've entered all the program labels into the list, we need to assign an action to each one so that the programs in question are loaded when the user clicks on the appropriate label. To do this, simply select 'DOS Command' and a string gadget will appear. In order for *HyperBook* to access any program, the filename complete with full path information must be entered. If, for example, you wanted to attach *DPaint* to a particular list item, you would enter something like 'DH1:Graphics/DPaintAGA/DPaint' for the pathname (obviously you should change this to reflect the position of *DPaint* on your hard disk!).

If you want to run a program that needs a fair amount of setting up (you might need to increase the stack, for example), simply write an AmigaDOS script that carries out the setting up and then using the AmigaDOS 'Execute' command to call the script from your *HyperBook* application.

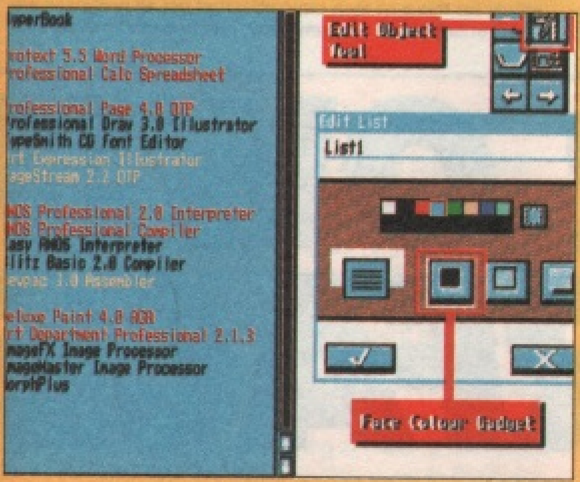


1 Once the *HyperBook* program has loaded, we can get started with this month's project. The first thing that we need to do is to create the *HyperBook* 'list' that will hold the list of the programs that can be run from our hard disk menu. Simply Click on the 'Add List' gadget in the *HyperBook* toolbox and then drag out a rectangle. This will need to fill the entire left-hand side of the screen.

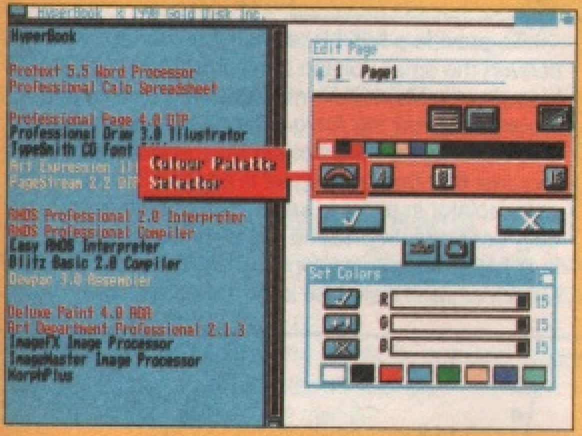




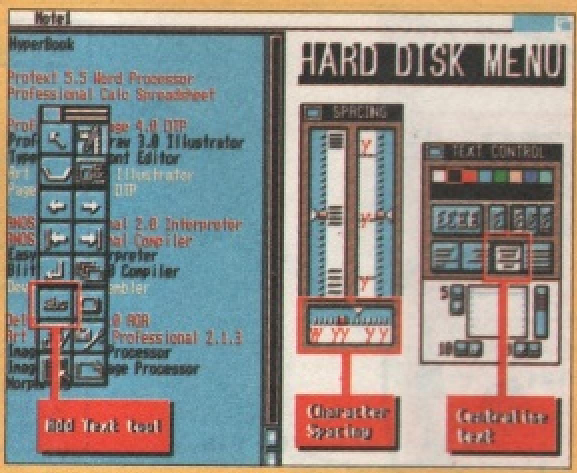
4 The colour of each list entry can be altered simply by selecting each entry in turn and then clicking on the appropriate colour gadget. This can be quite useful as it allows you to group programs using a sort of colour coding system. You could, for example, have all your DTP programs listed in red, programming languages in blue and so on.



5 Now let's change the background colour of the list box. Quit out of the Item List requestor and then click on the 'Edit Object' icon within the *HyperBook* toolbox. Move the mouse pointer over the list and then press the left mouse button followed by the right mouse button to bring up the List Editor. In the middle of the requestor you should see a row of three gadgets that allow you to alter the appearance of the face, outline and shadow of an object. Click on the face gadget and then select the colour that you'd like. Quit out of this editor by clicking on the tick gadget.



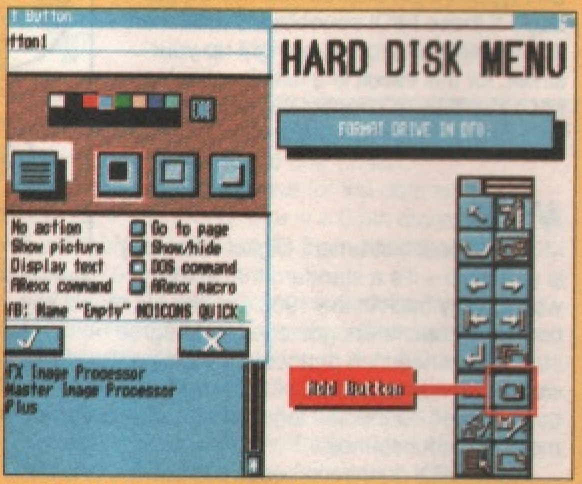
6 If you're not happy with the default colour palette, you can change it by selecting 'Edit Page' from the 'Page' pull-down menu. The Edit Page requestor should appear. Click on the little Rainbow gadget and a colour palette requestor will pop up on the screen. Alter the palette to suit your needs and then click on the tick gadget to return to the Edit Page requestor. Click on the Edit Page's tick gadget and you'll be returned to *HyperBook*.



7 Now that the list is complete, we can start adding in the menu title and a couple of function gadgets. First, the title. Click on the 'Add Text' tool and then drag out a text box of the size required. Once you let go of the left mouse button, a flashing cursor will appear inside the text box. Enter your text (in this particular case, enter 'Hard Disk Menu') but don't press <RETURN>. If you do, *HyperBook* will insert a carriage return causing the text to be scrolled up and decentralising the title.

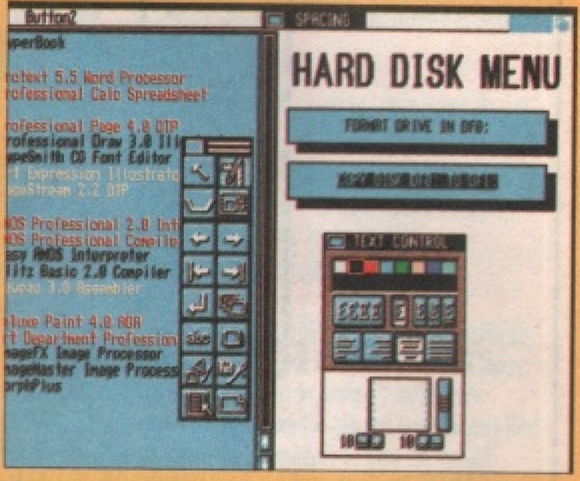
Along the *HyperBook* screen drag bar you should see two iconified windows entitled 'Spacing' and 'Text Control'. Click on the close gadgets of these two windows to bring them into view. Before we can alter the text however, we need to select it. Click on the first character and then drag the mouse pointer across the text to highlight it. Using the Text Control requestor, now click on the 'Centre' gadget to centre the text. You can also use this requestor to change the font by clicking on the 'Font' gadget. This will bring up a font requestor that – by default – displays the ROM fonts only. To load disk-based fonts, click on the gadget that has a small picture of a disk with an arrow and then select the font that you want.

If the text doesn't fill the text box fully, then you can also change the spacing of individual characters. Just drag the little arrow left or right to increase or decrease the character spacing.

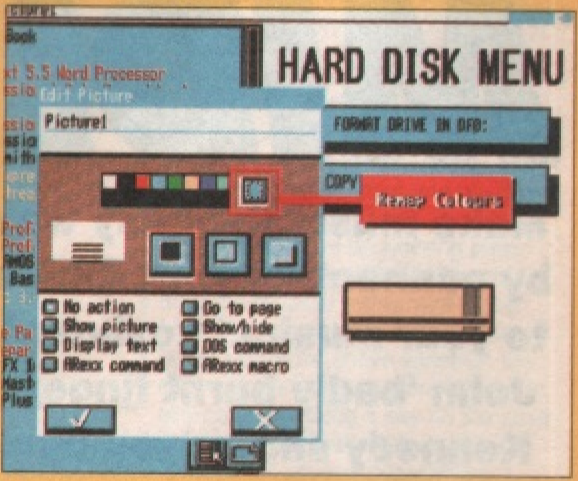


8 With the title complete, we can now add some function buttons to allow us to carry out common disk operations such as formatting, copying etc. First though, we need to create a button to hold the function. Click on the 'Add Button' tool and then drag out a rectangle of the size required. When you release the left mouse button, the Edit Button requestor will appear. Click on 'DOS Command' and then enter 'SYS:System/Format DRIVE df0: Name "Empty" NOICONS'. This essentially ties the AmigaDOS 'Format' command to the button so that when the user clicks on it, the Format command will be run. Note that this will be completely transparent – you won't, for example, get an AmigaDOS requestor appearing on the screen that shows progress. All that will happen is that the disk currently in drive DF0: will be formatted.

By default, the Edit Button requestor will not allow you to enter text into the button, so we need to quit out of the Button Editor and edit it manually using the 'Edit Object' tool. Click on this icon and then click twice on the button to select it. Just like the 'Add Text' option, a flashing cursor will appear in the centre of the button. Type in 'Format disk in DF0:' remembering not to press the <RETURN> key.

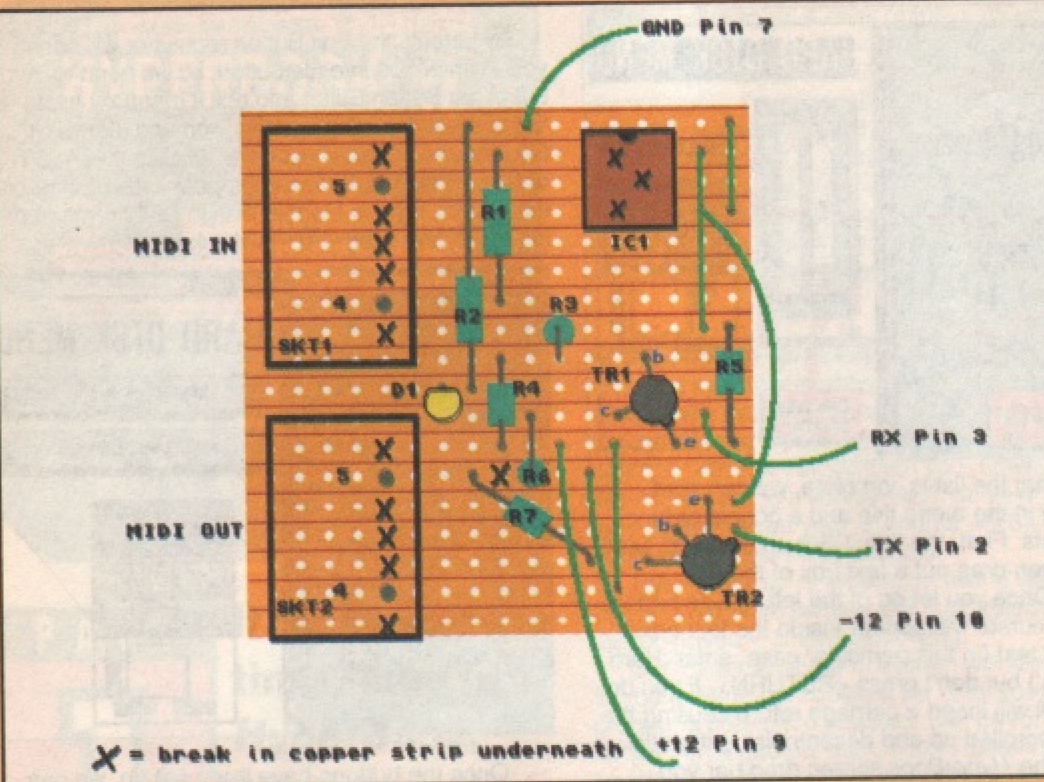


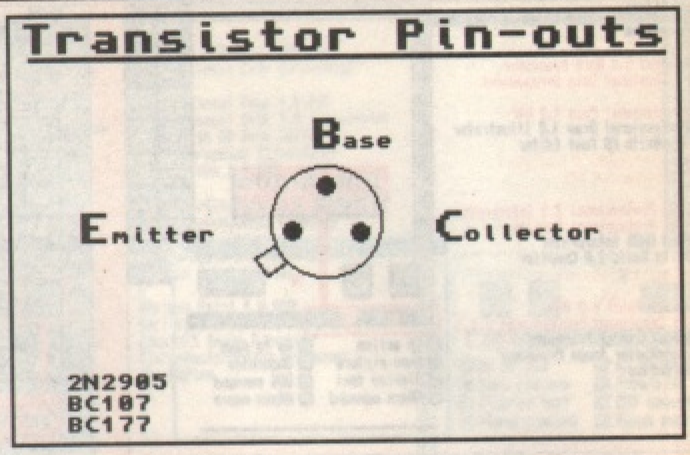
9 Once the buttons have been set up, we can fine tune the button labels by altering both the font and its colour. Click on the 'Edit Object' tool and then click twice on the first button to edit it. Highlight the text by dragging the mouse pointer across it whilst holding down the left mouse button. Call up the 'Text Control' requestor and click on the colour that you want.



10 Finally, let's add a graphic to our hard disk menu. First we need to draw the graphic using a paint package. Set the paint package to medium resolution (640x256) with eight colours and then draw your graphic and save it to disk as a standard IFF file. Once this is done, return to *HyperBook* and click on the 'Add Graphic' tool. This will bring up a file requestor prompting you to select the filename of the picture to load. The graphic is loaded into a separate screen that allows you to select a rectangular region using the mouse. Draw a rectangle around your graphic and then – if you're happy with it – click on the tick gadget to return to your *HyperBook* stack.

Even once you've selected the graphic, *HyperBook* won't simply drop it onto the page. The graphic is attached to the mouse pointer as a *DPaint*-like brush that can be moved and pasted onto any part of the screen. Place it directly below our function gadgets and then press the left mouse button. By now you will have realised that *HyperBook* doesn't display graphics in colour by default. It will remap the palette of the graphic so that it matches that of the stack. Click on the 'Edit Object' tool, click on the graphic with the left mouse button and then click the right mouse button to bring up the 'Edit Picture' requestor. The remapping gadget is a tiny square box to the right of the palette controls. Click on this and then click on the tick gadget to return to *HyperBook*. CU





The Vero layout (seen here from above) is fairly simple. Remember that the X points indicate a track cut – make sure the complete track is cut and check with a multimeter if possible. The inset shows the transistor as viewed from below. If you are using a substitute for this part then remember that not all packages are orientated in the same way, just to confuse everyone.

BUILD YOUR OWN MIDI INTERFACE

Make music the easy way by connecting your Amiga to your musical keyboard. John 'badly burnt fingers' Kennedy shows you how.

WARNING

READ THIS FIRST

We want you to enjoy building your project, so please take the time to read these warnings.

Although the project described here has been built and tested, neither the author nor CU AMIGA can be held responsible for any damage which may be caused to either yourself or your computer as a result of using it. As no mains voltages are required in this circuit it is extremely unlikely that you could electrocute yourself, but you should still take care. If your computer does not behave normally when the project is connected, switch off immediately. Check the circuit carefully for short circuits and wiring deficiencies. Always add or remove the parallel port connector with the computer switched off.

Never leave the soldering iron unattended, and always switch it off when it's not in use. It is all too easy to forget about it and then pick it up by the wrong end several hours later. If possible, wear protective eye-gear when soldering and use a vice or clamp to hold the circuit in place. Never splash hot solder around.

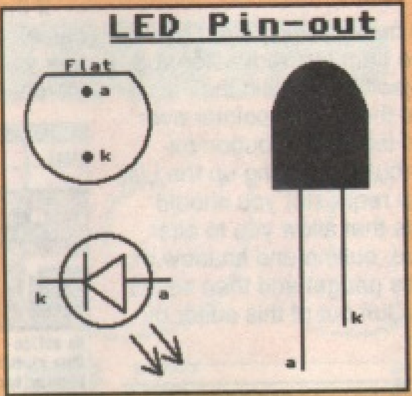
If you have a music keyboard, synthesiser or drum machine, get it out of the cupboard and check for some round DIN-type five pin sockets marked on the back. If these MIDI connections exist then this month's project will be right up your street, for this circuit is a fully functioning MIDI interface to connect the keyboard to your Amiga.

MIDI

MIDI (Musical Instrument Digital Interface) is a miracle – it's a standard that actually works. Way back in the 1980's all the big music keyboard manufacturers got together to agree on a standard connection protocol. At the time the idea was to provide a method of allowing several keyboards to be connected together, in order to generate more powerful sounds.

Each MIDI connection uses two cables, one for transmitting and one for receiving information. These are called the MIDI OUT and MIDI IN signals – the OUT from one piece of equipment is connected to the IN on the other, and vice versa. In order to include the Amiga in the MIDI chain, we need to find a way to process both the transmitted and received information into a form suitable for both parties.

Although the Amiga doesn't sport a MIDI connection, adding one is quite easy, as the serial port has been adopted as the recommended method by Commodore. All that needs to be done is to change the MIDI data into the RS232 standard. Any piece of music software which uses a MIDI interface can be used, as every interface is addressed by the Amiga in the same way.

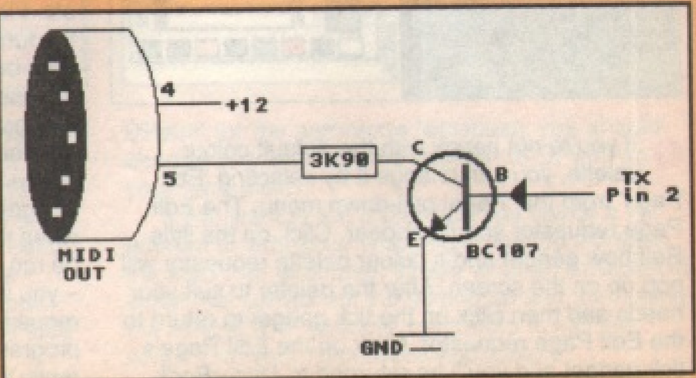


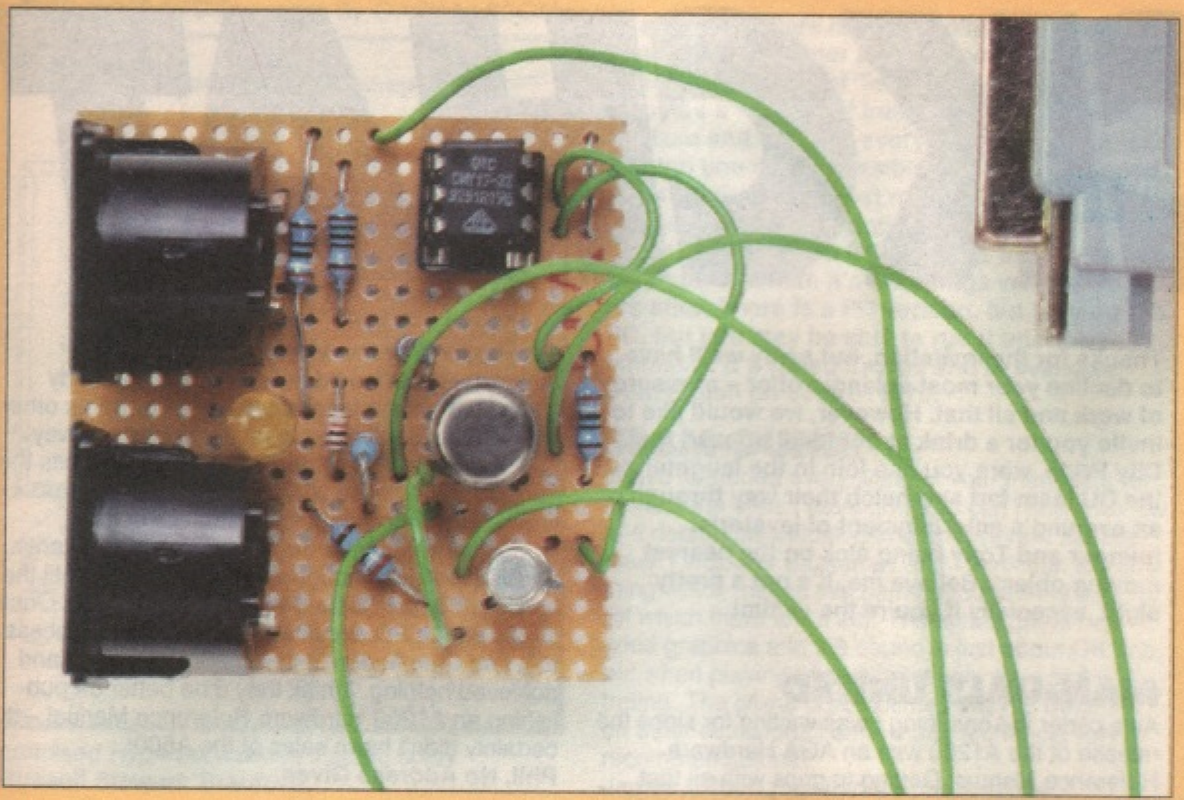
Of course, CDTV machines have MIDI interfaces as standard so they can practice smug grins and swan out of the room.

RS232

The Amiga uses the wildly exciting RS232 industry standard, which means the serial signal pulses in swings from -12 volts to +12 volts.

To provide a MIDI IN signal, the interface must convert the small voltage pulse from the musical instrument's MIDI OUT into these +/-12 volts, and likewise convert the Amiga's +/-12 output into a suitable MIDI voltage. Part of the MIDI specification requires that the input signal is passed through an opto-isolator in order to keep each instrument electrically separate. In practice this is no big deal, as a suitable isolator costs considerably less than a pint of Guinness, and it's better to be safe than sorry.





PARTS LIST

Resistors – All 0.25 Watt

R1	150 Ohm
R2	390 Ohm [optional – for use with LED]
R3	390 Ohm
R4	10K Ohm
R5	390 Ohm
R6	390 Ohm
R7	3K9 Ohm (Note: It's different from the 390R, this one!)

Semi-conductors

TR1	2N2905 PNP (if unavailable, BC177/8/9 will suffice)
TR2	BC107 NPN or similar
IC1	Opto-isolator, CYN17 or equivalent. Maplin's have one with order code RA57M.
D1	[optional] Any old coloured LED.

Miscellaneous

Small piece of vero-board. Two 180° 5-pin sockets, suitable for mounting directly on PC board. Connecting wire. 25way male D-type plug for connection to Amiga's serial port. Casing for above. MIDI instrument 8-pin (or 6 if you can find one). IC socket. Sockets for transistors (if you are a real chicken!). Pair of MIDI leads, each ending in 5-pin DIN plugs.

HOW IT WORKS

There are two individual circuits on the board – the MIDI IN and the MIDI OUT. First, the input. From a suitable 180° 5-pin DIN socket, the input signal is passed (via a resistor) to the input of the opto-isolator. Inside this tiny piece of black plastic, an infra-red LED will light every time a MIDI pulse is received.

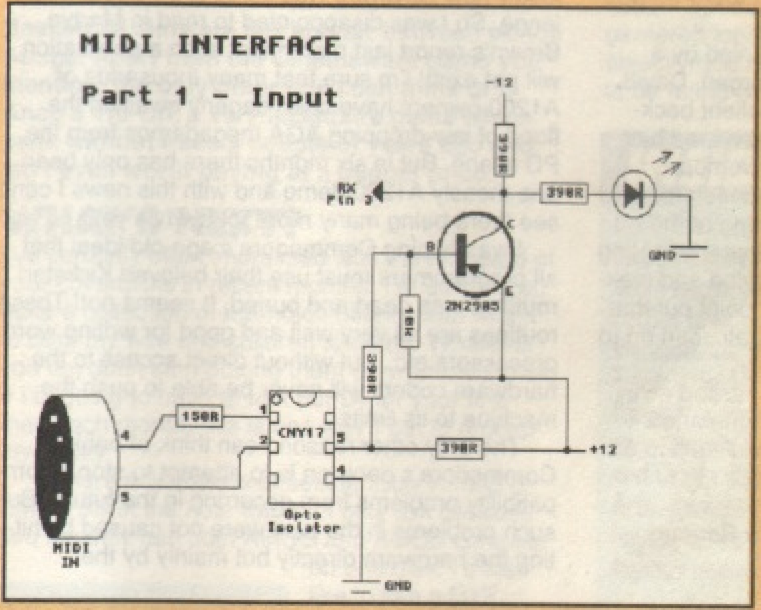
Beside the LED is a light dependent transistor, which will be 'turned on' by the infra-red flashes. The output of this device is fed into the base of a transistor, which acts as a switch. When a pulse occurs, the transistor switches on, providing an RS232-like input to the Amiga. The transistor is also used to flash an optical LED when a signal is transmitted, but this is an optional extra purely for show. You can leave it out with no ill effects.

The MIDI OUT circuit is even simpler, as no opto-isolator is required. The signal to be transmitted by the Amiga is used to switch yet another transistor on and off. When turned on, this transistor allows a 5mA current to flow into the MIDI socket, which will light the LED of the opto-isolator on the receiving end.

BUILDING IT

Only a very small scrap of vero-board is required for this project, less than 20 holes by 20 strips. Probably the best way to proceed is by soldering the two 5-pin DIN sockets into place.

Next make the breaks on the track. Pay particular attention to the connections from the DIN sockets, and ensure that no short circuits are present. You'll need to examine the sockets for the pin numbers, as it may be different from the one I used.



Now solder the IC socket for the opto-isolator in place. Note that the isolator is a 6-pin device, but you will probably need to use an 8-pin socket as I'm not sure 6-pin ones exist.

Solder in the wire links and resistors. Watch out for R7 as the colour code is almost the same as the R2,3,5 and 6. When soldering in the LED and the transistors, use the soldering iron as quickly as possible as these devices are heat sensitive. Check the orientation of the LED's and transistor's legs with the diagram. If you use different transistors, check their legs as the order may be different.

Note that I used a 2N2905 transistor because that was the only PNP device left in my local electronics shop – if you use a BC177 like I originally wanted to, you must check the pin outs. You cannot connect a transistor any way you want to!

The pin numbers following the connection leads in the diagram refer to the pin number of the 25way serial socket. You should be able to make out matching tiny numbers on the socket, but check with your Amiga manual if you are unsure.

TESTING IT

With the circuit built and thoroughly checked, it's time to plug it into the Amiga. Always, and I mean always, switch off the computer first. Switch it back on, and if the normal boot-up screen does not appear or you smell burning, *switch off immediately* and perform a double, triple and quadruple check.

If all seems to be working properly, connect the MIDI OUT socket from the musical instrument to the MIDI IN of the interface. If your keyboard performs 'active sensing', the LED will start to flash immediately. In any case, pressing a key on the musical keyboard should definitely make it flash. If this does not happen, there are several possibilities: 1. The interface circuit is not functioning – test it again. 2. The circuit is working, but the LED is soldered-in the wrong way round. 3. The musical instrument is not set-up to send MIDI information – see the instrument's manual for details.

If all is working, try loading your sequencing software. A good example is *MED*, which can be configured to use an external keyboard as an extension of the standard Amiga voices.

Other PD programs are available, but consider buying a program such as *Music-X* (be prepared to read the manual inside out!) or *Bars & Pipes* for best results.

When place in playback mode, and the correct cable used, the MIDI OUT function of the interface should work perfectly well. If not, check there is any output by using a multimeter. The value of R7 may need altered slightly if you are using extremely long leads. CU

PROBLEMS, PROBLEMS

Here's a special note to those who have had problems with previous circuits. All the circuits definitely work because I have built and used them – check your own board very carefully against the colour photograph.

Because we're only (vaguely) human the occasional minor error might slip through in the circuit diagrams, but the camera cannot lie.

Work through the following checklist:

1. Have you made clean breaks on the veroboard's copper tracks where indicated? Make the breaks before soldering components if possible, and check for short circuits with a multimeter.
2. Are capacitors, ICs, diodes and transistors the correct way round?
3. Are all the connecting leads present? Again, check with a multimeter if possible.
4. Are all the connection leads in the right places?
5. If the project still refuses to work, it's possible a component has been broken, perhaps by applying the soldering iron for to long. This applies especially to ICs and transistors.

NEXT MONTH

In the next issue, John Kennedy will delve deeply into the world of robotics. Watch this space to learn how to turn your Amiga into the brain of a highly suspicious android always worried whether you're planning to turn it off.

BACKCHAT

Once again the task of wading through our monu-Mental stack of mail fell to John Mather.

DRINKS ARE ON ME!

Perhaps you have heard of me and my nationwide campaign in the cause of Temperance.

Each year, for the past 14, I have made a tour of England, including Manchester, Liverpool, Glasgow, East Anglia, and the South East and have delivered a series of lectures on the evils of drinking.

On this tour I have been accompanied by a young friend and assistant, David Morgan. David, a young man of good family and excellent background, is a pathetic example of a life ruined by excessive indulgence in whisky and women.

David would appear with me at the lectures and sit on the platform wheezing and staring at the audience through bleary, bloodshot eyes, sweating profusely, picking his nose, passing wind and making obscene gestures, whilst I would point out that he was an example of what drinking, etc, can do to a person.

Last winter, unfortunately, David passed away. A mutual friend has given me your name and I wonder if you would care to take David's place on my next tour.

Yours in earnest expectation,

Rev. Harold Knight, Chairman, The Rescue Mission, London.

Thanks for the invitation, but sadly we'll have to decline your most splendid offer – pressures of work and all that. However, we would like to invite you for a drink at our local boozer, the City Pride, were you can join in the laughter as the CU team fart and belch their way through an evening's entertainment of lavatorial humour and Tony being sick on the nearest moving object. Believe me, it's not a pretty sight, especially if you're the victim!

MAN-UALS UNITED

As a coder the one thing I was waiting for since the release of the A1200 was an AGA Hardware Reference Manual. Getting to grips with all that lovely new hardware was going to be a real challenge. So I was disappointed to read in Martyn Brown's report last month that such a publication will not exist! I'm sure that many thousands of A1200 owners have been eagerly awaiting the flood of jaw-dropping AGA megademos from the PD scene. But in six months there has only been one measly A1200 demo and with this news I can't see there being many more for a while yet.

I was hoping Commodore's age-old ideal that all programmers must use their beloved Kickstart routines was dead and buried. It seems not! These routines are all very well and good for writing word processors etc., but without direct access to the hardware coders will never be able to push the machine to its limits.

The only other reason I can think of behind Commodore's decision is to attempt to stop incompatibility problems from occurring in the future. But such problems in the past were not caused by hitting the hardware directly but mainly by the assumption that the addresses held in the Kickstart ROMs would never change – nobody takes such things for granted now! Programs other than utilities don't need to multitask and anyway, you CAN write non system-killing code that hits the hardware directly so what is Commodore's problem? Their snobbish attitude smacks of the compulsory Nintendo/Sega licensing agreements.

So it looks as though we'll have to wait until the hardware data is leaked to the outside world. Once it gets on the PD circuit everyone will have access to it and Commodore's policy will have failed and achieved nothing. I think they'd be better off publishing an A1200 Hardware Reference Manual – it certainly didn't harm sales of the A500!

Phil, No Address Given.

Don't worry, you'll be able to get your hands on an AGA Hardware Reference Manual – unfortunately you'll have to wait until NEXT SUMMER!!! Apparently, cut backs at Commodore have delayed the publication of such a book, and it looks likely that the heavy-weight tome will not make an appearance until next year at the earliest. Sorry.

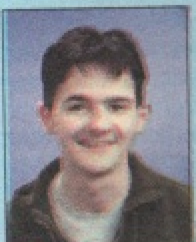
CUT THE HYPE

So where was the *Hyperbook* tutorial we were promised in the June issue, when you gave the original program away? I'd managed to suss out most of the functions and even put together a rudimentary slideshow routine, but I was really looking forward to an expert tutorial on the program. After all, if you bother to give away a program that's worth over £70, the least you could do is back it up with step-by-step guides. I hope we'll see the

TEAM TALK

In a rare gesture of goodwill, CU AMIGA's publisher opened up the rusty locks on his bomb-proof wallet and treated us all to a slap-up day out. Not ones to turn down the chance of wasting someone else's money, we leapt at the chance...

DAN SLINGSBY



The day began with Dan making a right prat of himself, trying to show of his ten-pin bowling prowess and falling flat on his face and guttering the ball at his first two attempts. A couple of pints later, though, and Dan was in the swing of things (with everyone else ducking out of his way), and he finished up tops [*natural born leader that I am – Ed*]. After that, things rapidly deteriorated when we piled into the Ruby In The Dust restaurant for some nosh. By this time, most people were a bit worse for wear, and Dan had an unfortunate encounter with his publisher in the downstairs toilet which resulted in his jeans taking somewhat of a soaking. The only problem was, Dan was not totally aware of Garry's dirty deed and proceeded to come to work in the same pair of jeans the next day. He's now got a rather jaded opinion on senior management!

JON SLOAN



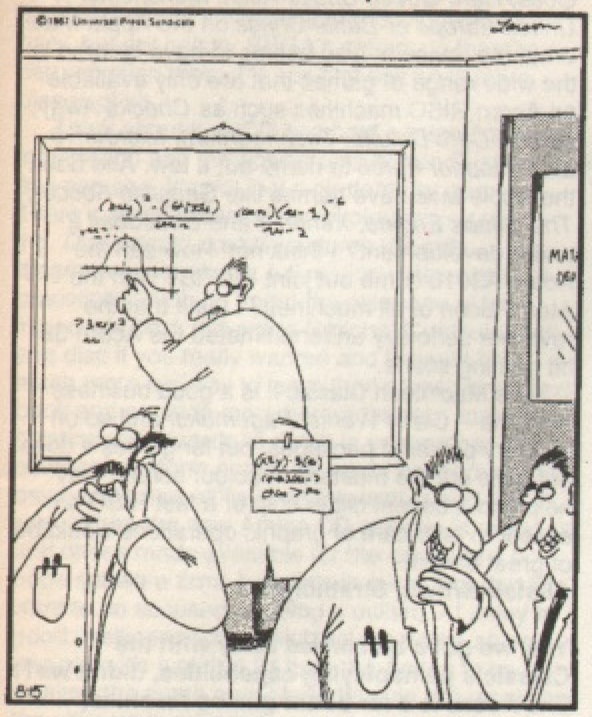
Jon had his sensible hat on during our day out and snootily sat by himself while the rest of the team were stuffing their faces with all manner of Tex-Mex grub and generally having a good time. At least, that's what he'd like you to believe. The truth is a rather more sordid affair, with Jon proceeding to drink everyone under the table, ordering champagne by the bucket full while Garry wasn't looking (which we've somehow got to pass off as a legitimate business expense!), and doing his best Eric Morcambe impressions to passers-by in the street. After falling asleep at the table (before which he muttered something about taking a mid-afternoon nap and could we tuck him up in bed, please), we decided to put the Northern lager fiend on the next slow train home, whereupon he promptly had his first encounter with a rolling pin from his just-married wife. Domestic bliss!

HEATHER TURLEY



Heather took the day off, rather than mixing it with the beer boys of CU. She can't kid us though, we know she's not really pregnant and that bulging tum is really an unfeasibly large beer belly from all those boozy lunches she sneaks in when no-one's looking. Actually, while writing this pack of lies, I've suddenly become all maudlin and sad as this is the very last issue of CU AMIGA that Heather will work on as she's about to become a mum. Things just won't be the same anymore – no more threats of grievous bodily harm if we don't finish a feature in time, or wacks around the ear-hole for coming in late after the register's been called! But joking apart, everyone at CU Amiga would like to wish Heather and her soon-to-be-born sproglet all the best for the future. Thanks for all the effort you've put into CU Amiga over the last few months – it's been greatly appreciated.

THE FAR SIDE By GARY LARSON



promised *Hyperbook* series starting soon.
Russell Stewart, Bradford.

Dan's the guilty party when it comes to the non-appearance of the *Hyperbook* tutorial. He forgot to commission it! Still, he's made amends this issue. This isn't the only example of Dan's forgetfulness – the fresh-faced Editor recently left £50 sticking out of a cash-point machine! I don't know, we pay him too much...

EQUATION EDITOR

In replying to S.P. Buckley's letter (p.176 June issue), you said that it was possible to get an equation editor for the Amiga. I am desperately looking for a WP with this feature for writing my University reports. Can you tell me where to get the program you refer to? At the moment it seems I might have to draw the equations in *DPaint* and import them as graphics.
Arthur Laughton, Sheffield.

Yes indeed. There is a text editor which can handle proper super and sub scripts which goes by the name of TeX (pronounced "tec"). It also has a resume of integral, differentiation, Laplace and virtually every other mathematical symbol you could possibly imagine. This used to be carried by a great many dealers, but it is not quite so easy to find these days. Try UniTeX Systems on 0423 520902 and make sure you tell them it's the Amiga version you are after. There is a PD version, but only on the PC, but you may be able to run it under an emulator. It's called EmTex and is available from Eiglen on 0793 611270.

SLAM-DUNK!

I have searched every issue of your magazine (or at least the ones I have got) and can't find a review of a decent basketball game anywhere! I already have *TV Sports Basketball* and I think that the only thing which makes this game good are the options (of which there are a lot). The actual game has good graphics and the sound is just about OK, too, but when playing I find it irritatingly slow and frustrating. The game is sometimes easy to beat, but on other ocassions I don't stand a chance. Any recommendations?
James Gilbert, Newcastle-under-Lyme.

Basketball sims are few and far between on the Amiga. Apart from the Cinemaware game you mention, the only other title I can think of is Anco's Tip-Off, a very lacklustre game which sank without trace a couple of years ago and isn't even worth buying at a budget price.

WHAT'S NEXT?

I've certainly been impressed with the standard of your coverdisks in recent months. I'm building up quite a collection of top-notch utilities with which to bore my wife and children to death. Whatever you do, don't stop putting them on your coverdisk. If I'm going to have to fork out £4 for your fine mag each month, this is one way I get to recoup my outlay.

Is there any chance of seeing *Easy AMOS* or *AMOS 3D* in the near future? I only ask because you recently had both AMOS and AMOS compiler on one disk. I'd also like to see a DTP package if possible and maybe another music package to the standard of your *OctaMed* giveaway last year. Don't want much, do I?!
Ed Sawyer, Exmouth.

I'm glad you're enjoying the full-price software we've been giving away. And don't worry, we're certainly not going down to one disk in the foreseeable future and will continue to give away commercial software for as long as we can afford it. It's doubtful you'll see either *Easy AMOS* or *AMOS 3D* as covermounts just yet, as the two titles are still clocking up respectable retail sales. If they do become available, though, you can bet CU AMIGA will be there with its cheque book poised. Just wait until you see what we've got planned for later on in the year!

COVER UP

One thing that constantly annoys me is the way you'll hype a game demo up out of all proportions to exactly what's on offer. A good example would have been April's *Chuck Rock 2* demo which was described as being absolutely HUGE! I can understand why the *Goal!* demo had a limit, but I'm sure a platform game could have offered more. *Premiere* jumps to mind as the way things should be done. It was absolutely brilliant. The other disk, by the way, has always surpassed even my expectations – thanks for providing superb packages which would otherwise have cost an arm and a leg, and a kidney and liver thrown in for good measure.

Another gripe I have is the feeling that CU has a predisposition to shower hyped up games with high percentages. *Project X* is a case in point. I had the dubious privilege of playing the game at a friend's house, but even with the cheat (which made it less fun to play) I could only take a couple of minutes of pure mayhem. It was truly an ultimate – but flawed – experience. But it still garnered tons of praise. Maybe a little bit more objectivity is needed. The percentage points seem to be faring worse than the rouble!

INSIDE INFORMATION

Does the recent merger between Spectrum Holobyte and Microprose signal the start of a series of software house takeovers? It's known that a number of softies are on decidedly dodgy financial ground at the moment, and that a link up with a cash-rich publisher would be one way to survive the increasingly tough trading conditions of the nineties. Only recently, we've seen Psygnosis gobbled up by Sony and Origin disappear into the bowls of Electronic Arts. Rumours sweeping the industry speak of a buying spree from the Far East in which many famous names will be swept away. Keep watching.

Lastly let's have many more DIYs and especially the previously mentioned slow-motion switch. They are a brilliant way of burning fingers and blowing fuses around the house. I cannot claim that my amplifier met with any degree of success, but it sure was fun trying! I'd love to get my hands on more ideas. Keep 'em coming.
Tanzeel Ansari, Whoknowswhereland.

Apologies about over-hyping coverdisks, but we do try and bring you the best game demos around. Because of our large circulation, we usually get first pick when it comes to the best demos available. I've got to agree with you, though, that the *Chuck Rock 2* demo was a bit of a let-down. It wasn't that big a playable slice of the action by any stretch of the imagination. In this particuar instance, though, the coverdisk label was actually produced before we'd seen the completed demo (such are the vagaries of magazine production!), so we had no idea it would be as short as it was.

I also don't think we overmark. If you check out any given issue, you'll find a whole range of scores. Only the best get top marks, and if that means awarding a CU AMIGA Superstar to a hyped game, then so be it. *Project-X* definitely warranted a high-score as it's the best shoot 'em up on the Amiga bar none. We've

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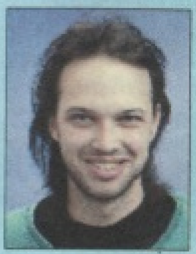
TONY HORGAN

Never having experienced a CU day out, Tony didn't know quite what to expect. He still hasn't fully recovered! What little he can remember, he's still too embarrassed to talk about so we thought we better enlighten him through these very pages. When we told him over dinner that Lord EMAP had decided to double his pay overnight and give him a company car, our Tone was overcome with emotion and it was hugs all round and 'Yersh my besht mates, youshare!'. Funnily enough, his mood changed quite dramatically when we told him it was all a pack of lies – never could take a joke, that's what we say! Nevertheless, Tone soon recovered (and was able to regain the use of his feet and stagger to the next pub) and spent the rest of the night enthralling us all by playing No Limit's latest hit with a spoon on a couple of empty beer bottles. Very sad.



NICK VEITCH

Unfortunately for the rest of the CU team, Nick has a lead-lined stomach that is impervious to alcohol, sulphuric acid, neutron bombs and anything else you'd care to chuck at it. It's also a huge bottomless pit that can literally soak up anything that's poured into it. This was especially unfortunate for our wily publisher who thought everyone would have passed out by 6 o'clock and he could escape with a cheap night out. Nick was hearing none of it and proceeded to mop up the entire contents of Garry's wallet plus several credit cards into the bargain. He's subsequently been banned from any further days out until medical science can offer a creditable reason for his still being alive. It was certainly back to earth with a bang the next day, though, and one with a very loud reverb too! But remember kids: drinking isn't clever or anything, it's just plain fun!



LETTER OF THE MONTH

HANGING ON THE TELEPHONE

I have become addicted to the world of comms ever since I got my trusty Linnet 24 Modem a couple of weeks ago. I have been logging on to all sorts of weird places and chatting to various Sysops and enjoying every minute of it. Unfortunately, I can't download anything, as most of the boards I 'phone are not aimed at Amiga users. Could you please tell me some Amiga BBS numbers north and south of the border? Also, are you going to introduce a comms section in your already excellent magazine?

Yours saving up for the next phone bill...
Jeff Cronkshaw, Kincardineshire, Scotland.

We introduced a Comms section last year, but it wasn't very popular and was subsequently dropped. Our recent survey also showed little support for the subject, which is a pity as everyone in the office logs-on at least once a week. If enough readers write in, perhaps we'll reinstate the column. As for board numbers, here's some of the most popular Amiga BBS names and numbers:

01 For Amiga	071 377 1358
061 Developments	061 799 4922
Amiga Forgery	0908 604229
Chiba City	0501 44262
CliffNet	0642 467324
End Zone	0524 752245
Guru 10	0738 52063
Junction 9	0372 278000
Meridian Amiga	0273 588924
Needful Things	0495 245151
Ponty	0443 409882
Protocol	0403 272931
Rock Lobster	0462 679524
Saxon	0273 308800
Theatre West End	0625 828795
Yukon Ho!	0232 768163

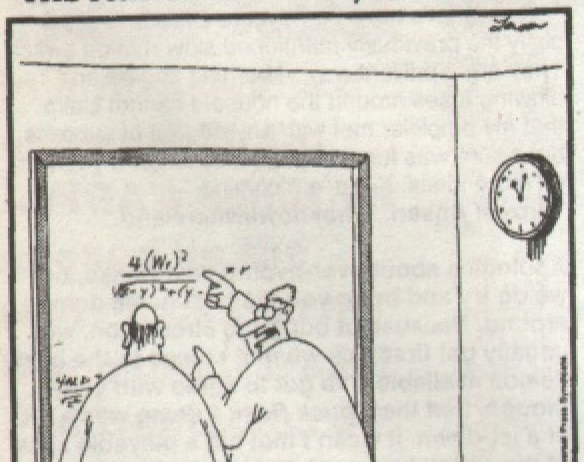
actually marked the enhanced version (reviewed this issue) down somewhat, as Team 17 have made it too easy for our liking now.

WHERE'S MY SUB?

Some months ago, I sent in an entry for your Club Call section of the magazine. Details about my club, City Centre Amiga Club, were printed in the December issue, for which I thank you very much. I'm not moaning about that, it's just that you promised a free subscription to the magazine for any of the groups published. Well, we haven't received one, and I'm writing to ask if this situation can be put right.
Sean Corrigan, City Centre Club.

Sorry you never received your subscription. Your first issue should be with you as I write this. What I would like to make clear though, is that the subscription isn't entirely free. We expect clubs to keep us informed of their progress, otherwise we'll withdraw the sub. Only fair, I'm sure you'll agree.

THE FAR SIDE By GARY LARSON



"Yes, yes, I *know* that, Sidney ... everybody knows that! ... But look: Four wrongs *squared*, minus two wrongs to the fourth power, divided by this formula, do make a right."

MATHS FRENZY

I am a university student and I am learning physics. As you might expect, there are lots of PCs in our school. On them we use a maths program called *Mathematica* which calculates some complex calculations (like integrals, differentiations, etc). After using this program fairly extensively on the PC and Macintosh computers, I wondered if Wolfram Research (the people behind the program) were planning an Amiga version, so I wrote to them to find out.

They replied that: 'At the current time we are not planning an Amiga version. We don't have enough interested people to make such a port viable. This may change in the future with more people, like yourself, writing in and expressing interest in a version.'

A computer lives as long as its users support it. Unfortunately, the Amiga is seen as a games machine and that annoys me. If Amiga users showed a bit of interest and wrote to Wolfram Research expressing their interest in this program, then maybe they would entertain producing an Amiga version of what is an excellent program.

I know I am not alone in this. There must be other Amiga owners interested in this subject. If you are, please write to Wolfram Research Europe Ltd., at: Evenlode Court, Main Road, Long Hanborough, Oxon, OX8 2LA, United Kingdom and express an opinion.
Sinan Gurkan, Turkey.

GAMES FRENZY

I read your Which Computer? feature in the May edition of your magazine, and on the whole I found it very interesting and accurate. I especially liked the sarcastic comments about the 'idiot proof' Apple Mac Classic.

However, I thought that the games rating for the Acorn A3010 was a bit strange. It received a lower mark than the black-and-almost-white Mac Classic. It simply escapes me how a machine with a small blocky black-and-white screen can possibly outdo a 256-colour TV-compatible machine like the Acorn A3010. After all, I can't see *Lotus Turbo 2, James Pond, Populous, Zool, Nebulus, Oh No More Lemmings, SWIV, Paradroid 2000, Gods, Hero Quest, Chuck Rock, Manchester United Europe* or *Battle Chess* on the Apple Mac. What the reviewer also seems to have ignored is the wide range of games that are only available on Acorn RISC machines such as *Chocks Away, Saloon Cars Deluxe, Technodream, Microdrive* and *Chopper Force* to name but a few. And does the Apple Mac have games like *Sensible Soccer, The Chaos Engine, Xenon 2* and *Speedball 2* under development? I think not! How can the Acorn A3010 come out joint WORST with the Atari Falcon of all machines? I think that the reviewer seriously underestimated the Acorn 32 bit gaming scene.

The Macintosh Classic II is a good business machine – *Claris Works, Pagemaker* and so on are very powerful packages, but for games it does not quite cut the mustard. A colour screen may help and a decent blitter chip or a fast RISC processor to take care of graphic operations would be of great benefit.
Alistair Brown, Strathclyde.

Yes, we got a bit carried away with the Classic's gameplaying capabilities, didn't we?! The Acorn is a far better games machine, although it's definitely not in the same league as the Amiga. The only reason why the Classic got such a hefty vote was because we all play *Spectra* over our networked Mac system. This is a 3D shoot 'em up which takes place in an enclosed arena, the idea being to blow each other to smithereens. Excellent fun and one reason why the magazine's late each month! But don't tell our publisher...

CD CONSOLE

I'm getting very enthusiastic about the new Amiga CD console that's about to be released. Although I've only read a few details so far, things are looking good. I'm an Adventure and RPG fan, so the possibility of only having to bother about one disc from now on instead of zillions of floppies has greatly gladdened my heart. It also means, I hope, that we'll see a bit of a renaissance with both genres.

The recent introduction of the SEGA MegaCD, and its multi-trillion advertising campaign, really shows up Commodore's lack of commitment or support for the CDTV and the A570 CD drive. It's like owners of the latter two machines have been shoved on a raft in the middle of the Pacific and told to row home without a paddle. The possibilities and potential of CD-ROM is unbelievable, and while I'm not happy with Commodore's efforts in supporting the end user, they have at least attempted to put CD technology across as a multi-media environment rather than SEGA's whoopee-where-has-my-intelligence-gone attitude. It makes me mad to think of the money they must be making out of their new machine. The CDs are

INSIDE INFORMATION

Sour grapes by Sega, wethinks, with the recent announcement of a 32-bit CD console due for launch... in 1995! Funnily enough, their announcement in trade paper, CTW, coincided with the unveiling of Commodore's new machine to the computer press. But all's fair in love and war and when they finally do launch their machine, they'll most likely find the market already overcrowded. What has to be a fantasy, though, is Atari's claim that they've nearly finished development work on a 64-bit console that'll come in at a competitive price. Well, it made us laugh!

far too expensive – £49.99 for a CD which costs less than a quid to manufacture is highway robbery, but will bolster SEGA's coffers so that they can run even more TV ads and sell even more pieces of kit.

Think about it. A CD can hold a huge amount of information and the possibilities are endless as far as I can see. It's not just a platform for games. There's a real potential for revolutionising teaching. Discs could contain pictures, sounds, diagrams, animations, full motion video excerpts, practically anything to get the message across. You could pack the entire National Curriculum on one disc if you really wanted and it would be a much more fun way to learn than some boring text book and an even more boring teacher. Instead of blasting evil wizards to death in yet another bog-standard platform game, we could be learning and developing new skills in an interactive and fun way. When the new Amiga CD console is released and drives made available for the computers I hope software firms bear this in mind. Not that I want to be accused of being a dullard – I enjoy a good intelligence-zapping blast the same as anyone else, it's just that I'd hate the Amiga to be classed the same as a Megadrive as this would be the ultimate humiliation.
Allan McLeod McDonald, Preston.

INSIDE INFORMATION

Acclaim know when they're on to a good thing. Fresh from the success of their never-ending line of WWF games, the firm have signed a new deal with the World Wrestling Federation which effectively ties up the licence until the end of the century. The deal covers all interactive media, including cartridge, arcade games and floppy disks. This has truly gladdened the hearts of everyone here at CU AMIGA as such was the outstanding quality of the last two Amiga games, that we can hardly wait to get our teeth into the next series of releases. Let's hope they come up with some BIG improvements.

Well, as you'll now know after reading this month's news pages, the CDTV is virtually history now that the CD AMIGA console has been launched. Fortunately, Commodore claim that 60 per cent of CDTV titles will be compatible with the new machine. I'm in total agreement with you about SEGA's Mega CD – I haven't seen a decent game so far. Great ads, though!

HOW OLD'S DAN PART 2?

I've been doing a bit of research to find out how old Dan really is by re-reading all my old CU AMIGAs. Now, Dan joined CU in June 1990 (I think), so he's been with the mag more than three years. He's also mentioned that he's got a degree and a post-graduate diploma, so that's another four years at least. I then came across a piece in which he said that he's had a couple of years on the dole and also worked on a bicycle magazine. Toting all this up, you get a grand total of approximately 10 years.

Now, add that little lot onto the usual entry age to University (18) and you get the grand old age of 28. So that's my guess and I claim the free bundle of software.
Charlie Slicker, Manchester.

Close, but no tomato. Entries have ranged from 18 to (somewhat unrealistically) 48, but no-one's cracked it yet. Still, great piece of detective work. Maybe we'll have a winner next month.

CLUB CALL

Club Tropicana drinks are free... fun and computers, there's enough for everyone...

DISK AUSTRALIA

For a different perspective on the Amiga scene, you might want to take a look at Disk Australia, a 16-page magazine that comes with four supporting disks. Until recently, distribution has been limited to Australia, but there's now a growing international membership.

The four disks cover most aspects of the Amiga, from games through to the technical side, including DIY projects, hardware reviews, game cheats and various features. UK members can get the disks and mag for £7 per issue.
Contact: Disk Australia, PO Box 418, Cowandilla 5033, South Australia, Australia.

NORWICH MASKED HEROES

What do you reckon on that name then? No, it's not the local balaclava helmet club, but a band of enthusiastic Amiga users (is there a difference?). All their correspondence is carried out via their own disk mag.

With no bias to any particular subjects, it caters for most enthusiasts. There are the usual articles on all things Amiga, with a few 'real world' features too, which help to break it up. To be frank, the standard of writing in the reviews is well below par, but as it's all very informal anyway, it doesn't really matter. Contact names and addresses are included on the disk, and there's a lot of encouragement for you to get off your bum and get involved. For £2.50 you can become a member, which gets you the current issue of the diskmag, and mailouts every now and then with news of forthcoming issues.
Contact: K. Frary, 22 Russell Avenue, Spixworth, Norwich, Norfolk NR10 3NY.

NOTHING BUT AMOS

If a few pages in CU AMIGA every month isn't enough to satisfy your lust for AMOS info, take a look at this new diskmag. It's dedicated completely to AMOS – it's even written in AMOS!

News, reviews, previews and tutorials account for most of the content. These are read from a simple but dull text viewer, which can also play music modules and display IFF graphics. Some articles are aimed at beginners, while others are written with more advanced users in mind. If you're the type who can go on about AMOS till the cows come home, you'll be in your element with this disk.

At the moment, NB AMOS is still in its first issue, but within a few months, it'll probably be twice the size, and twice the value. You can either buy issues separately for £2.50, or stump up the £24.00 annual subscription rate for 12 issues.
Contact: NB AMOS, 64 Western Avenue, Prudhoe, Northumberland, NE42 6PA.

AMIGA USER GROUP INTERNATIONAL REGISTER

If you still can't find a club that's right for you, maybe you should get hold of the AUGI Register. Compiled by Computer and Design Services, it's a massive list of Amiga clubs that spans the globe. As well as the UK contingent, there are organisations from North and South Africa, Australia, Canada and Europe. The disk is available the address below for £1.50 (including post and packing).
Contact: Computer and Design Services, Dept PD, 24 Blackmoor Croft, Tile Cross, Birmingham. B33 OPE. Tel: 021 779 6368.

AMOS X-TASY PD

As a club, X-TASY PD doesn't exist yet, but they're on the lookout for members. Already established as a PD library, X-TASY are trying to get hold of as many AMOS users as possible, and hope to set up a network of members who can swap code, sound samples, graphics and so on, and give each other advice when problems arise. If you fancy becoming part of the fledgling club (whether you're a beginner or an experienced user), get in touch with them pronto.
Contact: X-TASY PD, 6 Heysbank Road, Disley, Stockport, Cheshire, SK12 2BJ.

NULL AND VOID

We are two Amiga owners in distress! maybe, just maybe, you can help!!

Recently, we parted with £9 of our hard-earned cash to buy a Null Modem cable. This wonderful device allows us to link up two Amigas via the serial port and play dual games on Lotus Turbo Challenge and Stunt Car Racer. These already incredibly good games were utterly transformed and we soon found ourselves battling it out to the death on Stunt Car racer and making three other drivers eat dust on Lotus.
Daniel Mortimer, Maidenhead.

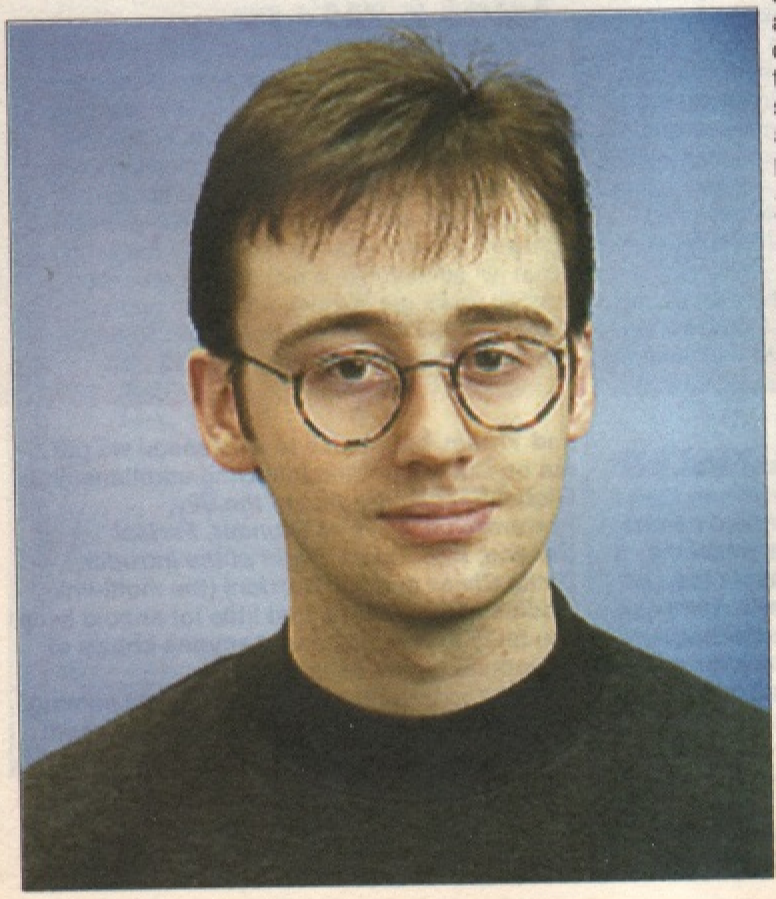
Off the top of our heads, we could only think of *Falcon, Populous/Populous 2, Powermonger* and *Vroom*, but thanks to a message we put out on Cix, we got the following additional list: *Global Effects, Knights of the Sky, Powerdrome, Days of Thunder, Perfect General, Robosport, Flight of the Intruder, Battle Chess* and *Air Warriors* (the multi-link modem game). There, that little lot should keep you busy for a while, and if anyone knows of any others, do let us know.

With the bottom of the page rapidly coming up to meet me, I'm just left with enough room to say keep those letters coming. We read each and everyone of them, and enjoy reading your thoughts on the magazine. Send your letters to: CU AMIGA, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. Ta!

ROLE PLAYING RENAISSANCE?

Recently developers have been steering away from porting PC adventure games onto the Amiga. Jon Sloan laments this change and asks whether the new Amiga CD32 console will change all that.

Forever championing consumer rights, Jon Sloan has always had a dream that one day he'd work for Watchdog. It's not that he particularly likes the programme, it's just that he wants to get close enough to that annoying Lynn Ffoulds-Wood so he can stuff a dangerous toy down her throat.



I've been involved in the games scene for many years now, both as a consumer and, more recently, as a journalist. This duality has allowed me to gain insights into the workings of the industry that most games players simply don't have the opportunity to get.

RPG FOR ME

As an ardent fan of adventure games I have long hovered over making a decision whether or not to buy a PC. It's not that I think that they're better machines, they patently are not, it's just that all the really great adventure games appear first on the PC. Recently Microprose released the fantastic *Legacy* on PC; it's received rave reviews in all the mags and I must say it looks wonderful. However, it's going to be many months before it hits an Amiga and even when it does there's no guarantee that it will even be half the size or half as good.

Another worrying trend is that many developers seem to be dropping the Amiga completely when it comes to new RPGs. Take the recent *Alone in the Dark* game from Infogrammes. At first glance it's nothing too new – a third person perspective 3D adventure – but closer inspection reveals a game of stunning graphics and even better gameplay. It uses odd choices of camera angles and a forced perspective to generate an incredible amount of atmosphere. Our sister magazine *PC Review* rated it 9/10 which, on their marking scale, is unprecedented. Unfortunately it won't appear on the Amiga. Even if that doesn't appeal to you what about the third game in the *Monkey Island* series? If any game epitomises fun adventuring that is it and it's been phenomenally successful on the Amiga, yet there are no plans for the third game to make it onto our favourite machine.

I'd like to know why! It's not that the Amiga has worse graphic capabilities. Now that we've got the AGA chip set there simply is no excuse. What about the sound? Again, base machine for base machine the Amiga outperforms any PC – you're looking at upwards of £80 just to install a decent sound board.

BAD MEDICINE

Software houses have long argued that piracy has been one of the main reasons that games don't appear on the Amiga. Evidence the fact that the majority of PC games are hard disk installable, especially the adventures, yet many Amiga ones are not. They claim that it makes it easier to pirate a game when it is installable. But their reticence in doing so has not stopped piracy has it? If you're worried about piracy you can still use ingenious manual or map based copy protection if you put your mind to it. Of course, the majority of PC-based adventures have to be installed on hard disk. It can be organised like this because PCs come with hard disks as standard. It wouldn't work in the Amiga market simply because, for the lower spec machines, hard drives are optional extras.

On that subject, I have spent many wasted hours of my time frantically fumbling for disk number 8 or 9 or whatever (all the time wishing I'd had the sense to save up for a hard disk). It seems to be an accepted convention in the adventure genre that games must come on multiple disks. Obviously, they involve complex plots and detailed graphics so you need a large amount of memory to store and run them. The down side is that we all have to live with multiple disk swapping. That wouldn't be so bad if programmers had the foresight to write games so that you didn't need to insert a disk just so the processor could access about 50 bytes of info before asking for the previous disk back.

GET TO THE POINT

However, I do see light at the end of the tunnel (or dungeon). Let me pose a little question – what will happen to adventure games if there existed a machine with AGA capability with a virtually infinite storage capacity that needed one disk? The logical answer would be that they will explode. Well, we now have that machine, launched towards the end of August the CD32 could herald a new age for adventure games. Think about it – 256,000 colours on screen, 68020 processor, single disk with huge storage capacity – and you must see that this is the machine that Amiga adventurers have been waiting for.

BACK TO THE FUTURE

There are hundreds of PC adventure games already in existence that could very easily be ported across onto the CD. That's an amazing backlog of games to start on. Plus, there are dozens of new games in production. Best of all I have it on good authority that CD pricing is going to average out at about £29.99. Compare that to PC games where the average price is now closer to £40 or £45. And the new console is going to be priced at £299 – less than one third of the price of a decent spec PC.

Anyway, the real point of this article is a plea to developers everywhere. Please realise the potential of the CD, support it, develop for it and, for me, write a few decent adventures. Forget the platform romps, ignore the beat 'em ups – they're all short lived phenomena anyway – an adventure lives for longer and gives you the potential to snare older players with a greater disposable income. Think about it! CU

THE EYES HAVE IT!

THE CRITICS HAVE CAST THEIR VOTE - FLASHBACK IS THE WINNER

“ Flashback... outperforms Another World - it's by far the deeper game of the two ”

CIARAN BRENNAN
Games Retailer (UK)

“ This game has no equal in its field ”

DOMINIC DIAMOND
Gamesmaster TV Series (UK)

“ Just awesome!... best Mega Drive game I've ever seen or played! ”

PAUL GLANCEY
Megatech (UK)

“ ...there's over two-thirds of the year left and I can honestly state that Flashback is the game of the year! ”

SIMON BYRON
The One Amiga (UK)



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